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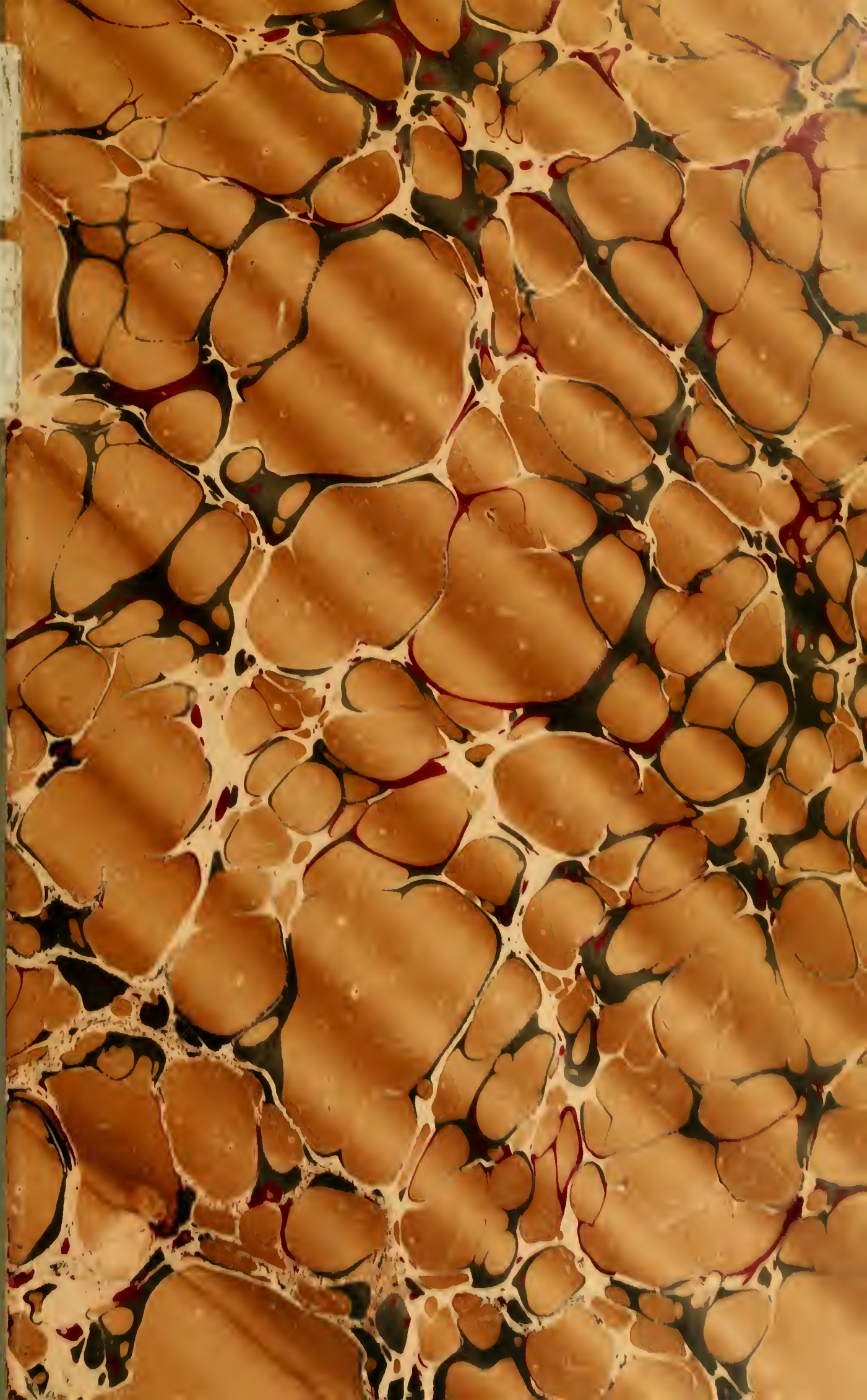

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Memoirs of the Museum of Comparative Zoology

AT HARVARD COLLEGE.

Vol. XXXV. No. 2.

REPORTS ON THE SCIENTIFIC RESULTS OF THE EXPEDITION TO THE TROPICAL PACIFIC, IN CHARGE OF ALEXANDER AGASSIZ, BY THE U. S. FISH COMMISSION STEAMER "ALBATROSS," FROM AUGUST, 1899, TO MARCH, 1900, COMMANDER JEFFERSON F. MOSER, U. S. N., COMMANDING.

IX.

REPORTS ON THE SCIENTIFIC RESULTS OF THE EXPEDITION TO THE EASTERN TROPICAL PACIFIC, IN CHARGE OF ALEXANDER AGASSIZ, BY THE U. S. FISH COMMISSION STEAMER "ALBATROSS," FROM OCTOBER, 1904, TO MARCH, 1905, LIEUT.-COMMANDER L. M. GARRETT, U. S. N., COMMANDING.

X.

THE BRACHYURA.

By MARY J. RATHBUN.

WITH NINE PLATES.

[Published by permission of George M. Bowers, U. S. Commissioner of Fish and Fisheries.]

CAMBRIDGE, U. S. A.:
Printed for the Museum.
August, 1907.

EASTERN TROPICAL PACIFIC.

The following Publications of the Museum contain Reports on the Dredging Operations in charge of Alexander Agassiz, by the U. S. Fish Commission Steamer "Albatross," during 1904 and 1905, Lieut.-Commander L. M. Garrett, U. S. N., Commanding.

I. Alexander Agassiz. Three Letters to the Hon. George M. Bowers on the Cruise in the Eastern Pacific, of the U. S. Fish Commission Steamer "Albatross." Bull. M. C. Z., XLVI. No. 4. April, 1905. 22 pp.

II. Harriet Richardson. Description of a new genus of Isopods, typical of a peculiar family. Bull. M. C. Z.; XLVI. No. 6. July, 1905. 4 pp. 1 Plate.

III. C. A. Kofoid. Craspedotella, a new genus of the Cystoflagellata, an example of convergence. Bull. M. C. Z., Vol. XLVI. No. 9. September, 1905. 5 pp. 1 Plate.

IV. W. E. Ritter. Octacnemus. Bull. M. C. Z., Vol. XLVI. No. 13. January, 1906. 22 pp. 3 Plates.

V. Alexander Agassiz. General Report of the Expedition. Mem. M. C. Z., Vol. XXXIII. January, 1906. 90 pp. 96 Plates.

VI. T. W. Vaughan. Madreporaria. Bull. M. C. Z., Vol. L. No. 3. August, 1906. 14 pp. 10 Plates.

VII. C. R. Eastman. Sharks' Teeth and Cetacean Bones. Bull. M. C. Z., Vol. L. No. 4. November, 1906. 26 pp. 4 Plates.

VIII. S. F. Clarke. The Hydroids. Mem. M. C. Z., Vol. XXXV. No. 1. February, 1907. 20 pp. 15 Plates.

IX. C. A. Kofoid. New Species of Dinoflagellates. Bull. M. C. Z., Vol. L. No. 6. February, 1907. 48 pp. 18 Plates.

X. Mary J. Rathbun. The Brachyura. Mem. M. C. Z., Vol. XXXV. No. 2. August, 1907. 54 pp. 9 Plates.

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THE BRACHYURA

As dredging and shore collecting were of secondary importance during the two cruises of the "Albatross" in the tropical Pacific, the adult Decapods obtained by no means represent the complete fauna of the area visited. Nevertheless, 136 species of Brachyura were obtained, and among them 18 species and one genus new to science.

The majority of the new forms are from the Caroline Islands and the Paumotu Archipelago, while two come from Easter Island. A remarkable discovery is that of a Callinectes inhabiting Tahiti and the Fijis. The genus is one heretofore restricted to middle America and the west coast of Africa. The insular species, even as observed in the young, is a strongly marked one. An addition to the deep-water fauna is a Scyramathia, dredged in 300 fathoms off the Galapagos.

A young specimen of the shore crab, *Grapsus longitarsis*, only 6.5 mm. wide, but having the form of the adult, was taken in the intermediate tow-net, between 300 fathoms and the surface, at station 4717, about 600 miles southwest of the Galapagos Islands, where the depth of the ocean is 2153 fathoms, and where the South Equatorial Current sweeps in a northwesterly direction past the Galapagos towards the Mid-Pacific. It is not surprising, then, that this species when full grown does not inhabit the Galapagos, but is known to occur at the Paumotus, the Ellice, and the Hawaiian Islands. If this single example is representative, the species is fully equipped for its littoral life long before it reaches its final habitation.

The type specimens described below are in the United States National Museum.

The drawings were made by Miss E. G. Mitchell, the photographs by Mr. Clarence Dodge.

INDO-PACIFIC REGION.

OCYPODIDAE.

Ocypode ceratophthalma (Pallas).

Ocypoda ceratophthalma Alcock,[1] 1900, **69**, 345.

Rangiroa Id., Paumotus; shore; Sept 23, 1899; 1 ♂.
Fakarava Id., Paumotus; outer reef; Oct. 12, 1899; 1 juv.
Makemo Id., Paumotus; Oct 21, 1899; 1 ♂.
Nomuka Iki, Tonga Group; shore; Dec. 2, 1899; 2 ♂.
Guam Id., Ladrone Ids.; Feb. 22, 1900; 1 ♀.

Ocypode cordimana Desmarest.

Ocypoda cordimana Alcock, 1900, **69**, 349.

Nomuka Iki, Tonga Group; shore; Dec. 2, 1899; 1 ♂, 1 ♀.

Uca tetragonon (Herbst).

Gelasimus tetragonum Alcock, 1900, **69**, 357.

Borabora Is., Society Group; shore; Nov. 17, 1899; 9♂, 2♀.
Tongatabu, Friendly Islands; reef and shore; Nov. 30, 1899; 5♂, 1♀.
Tarawa Is., Gilbert Group; shore; Jan. 3, 1900; 1♂.

Uca gaimardi (Milne Edwards).

Gelasimus gaimardi Milne Edwards, Ann. Sci. Nat., 1852 (3), **18**, 150, pl. 4, fig. 17.

Near Papeete, Tahiti; Sept. 29, 1899; 3 ♂, 2 ♀.
Borabora Is., Society Group; shore; Nov. 17, 1899; 22 ♂, 10 ♀.
Kusaie, Carolines; Feb. 9, 1900; 1 ♂.

GECARCINIDAE.

Cardisoma carnifex (Herbst).

Cardiosoma carnifex Alcock, 1900, **69**, 445.

Rangiroa Island, Paumotus; beach; Sept. 21, 1899; 1 ♂.
Rangiroa Island on Mohegan Beach; Sept. 21, 1899; 1 ♂.
Near Papeete, Tahiti; Sept. 29. 1899; 1 ♂ juv., 1 ♀ juv.

[1] As the greater part of the species enumerated are described by Alcock in his "Materials for a Carcinological Fauna of India," published in the Journal of the Asiatic Society of Bengal, 1895–1900, **64-69**, references to that work are abbreviated to year, number of volume, etc.

Cardisoma rotundum (Quoy and Gaimard).

Thelphusa rotunda Quoy and Gaimard, in Freycinet's Voyage autour du monde, 1825, Zool., **3**, 527, pl. 77, fig. 1 (*Thelphuse chaperon arrondi*).

Cardisoma hirtipes Dana, Proc. Acad. Nat. Sci. Phil., 1851, **5**, 253; Crust. U. S. Expl. Exped., 1852, **1**, 378; atlas, 1855, pl. 24, fig. 2.

Cardiosoma hirtipes, Alcock, 1900, **69**, 447.

Cardisoma rotundum Safford, Contr. U. S. Nat. Herbarium, 1905, **9**, 90. Rathbun, Bull. U. S. Fish. Comm. for 1903 (1906) part 3, 838.

Niue; Sept. 25, 1899; 1 ♀, juv.

Besides the characters given by Alcock (*loc. cit.*) for distinguishing this species from the preceding, the following are very striking: — The width (transverse dimension) of the orbit is about $\frac{3}{4}$ of the anterior width of the front, in *C. rotundum;* the width of the orbit is greater than the anterior width of the front, in *C. carnifex*. The granulated line which marks the antero-lateral border of the carapace is not prolonged behind the level of the gastro-cardiac suture, in *C. rotundum;* while the same line is prolonged far behind the suture, in *C. carnifex*.

In the 3 females of *C. rotundum* which I have examined, the antero-lateral region of the carapace and also the chelipeds are much more roughly granulated than in the males.

GRAPSIDAE.

Grapsus grapsus tenuicrustatus (Herbst).

Grapsus grapsus tenuicrustatus Rathbun, Bull. U. S. Fish Comm. for 1903 (1906), part 3, 838, and synonymy.

Mohegan Reef, Rangiroa Id., Paumotus; Sept. 21, 1879; 1 ♂, 3 ♀

Rangiroa Id.; beach; Sept. 21, 1899; 1 ♀.

Fakarava, Paumotus; reef, sea beach; Oct. 13, 1899; 1 ♂.

Makemo, Paumotus; Oct. 29, 1899; 1 ♂, 1 ♀.

Grapsus strigosus (Herbst).

Grapsus strigosus Alcock, 1900, **69**, 393.

Tongatabu, Friendly Islands; shore; Nov. 29, 1899; 2, ♂ and ♀ of small size.

Grapsus longitarsis Dana.

Grapsus strigosus longitarsis Rathbun, Bull. U. S. Fish Comm. for 1903 (1906), part 3, 838, text fig. 4, pl. 8, fig. 1.

Rangiroa Island, Paumotus; beach; Sept. 21, 1899; 1 ♂, 1 ♀.

Mohegan Reef, Rangiroa; Sept. 21, 1899; 1 ♂.

Tikei, Paumotus; shore; Oct. 9, 1899; 1 ♀ with eggs.

Fakarava Island, Paumotus; outer reef; Oct. 12, 1899; 1 ♂.

Funafuti, Ellice Islands; shore; Dec. 25, 1899; 1 ♀.

Between Galapagos and Manga Reva; 300 fath. to surface; station 4717; Jan. 13, 1905; 1 juv.

I now believe the *longitarsis* form to be an independent species. Besides the characters given in the work above cited, *G. longitarsis* has the anterior half of the carapace more tuberculous, front wider, and the ridge running lengthwise across the middle of the palm less distinct than in *G. strigosus*. Although the fingers are narrower at the tip than in typical Grapsus, they are much more hollowed underneath than in Geograpsus.

Geograpsus grayi (Milne Edwards).

Geograpsus grayi Alcock, 1900, **69**, 395.

Niue; Nov. 25, 1899; 1 ♂, 1 ♀.

The width of the meropodites of the ambulatories in this and the following species is not a dependable character. In the U. S. National Museum there are specimens of *G. grayi* from Glorioso Id. in which the meropodites are less than half as wide as long, and a series from Japan in which they are more than half as wide as long.

In *G. crinipes*, which have been handled (from 7 localities), the meropodites are commonly less than half as wide as long, sometimes just half as wide as long.

Geograpsus crinipes Dana.

Geograpsus crinipes Alcock, 1900, **69**, 396.

Makemo Id., Paumotus; Oct. 29, 1899; 1 ♂.

Aruo Atoll, Marshall Ids.; Jan. 27, 1900; 1 ♀.

Ponape, Caroline Ids.; Feb., 1900; 1 ♂, 1 ♀.

Kusaie, Caroline Ids.; Feb. 9, 1900; 1 ♀.

Geograpsus lividus stormi de Man.

Geograpsus lividus var. **stormi** de Man, Zool. Jahrb., Syst., 1895, **9**, p. 88; 1898, **10**, pl. 28, fig. 18 *a* and *c*.

Nukuhiva, Marquesas Ids.; shore, seine; Sept. 15-17, 1899; 1 ♀ with eggs.

Tarawa Id., Gilbert Group; shore; Jan. 3, 1900; 1 ♂.

Tari-Tari Id.; shore; Jan. 6, 1900; 1 ♀.

Leptograpsus variegatus (Fabricius).

Leptograpsus variegatus Kingsley, Proc. Acad. Nat. Sci. Phil., 1880, 196.

Easter Id.; shore; Dec. 21, 1899, Dec. 16, 20, 1904; 4 ♂ 5 ♀; also in La Perouse Bay; Dec. 17, 1904; 7 ♂, 5♀.

Metopograpsus messor (Forskål).

Metopograpsus messor Rathbun, Bull. U. S. Fish Comm. for 1903 (1906), part 3, 839.

Borabora, Society Ids.; shore and fringing reef; Nov. 17, 1899; 2♂.

Tongatabu; shore and reef; Nov. 29, 30, 1899; 11 ♂, 8♀.

Tari-Tari Id.; shore; Jan. 19, 1900; 1 ♂.

Kusaie, Caroline Ids.; reef; Feb. 8, 1900; 2♀.

Pachygrapsus transversus (Gibbes).

Pachygrapsus transversus Rathbun, Bull. U. S. Fish Comm. for 1900 (1901), **2**, 17.

Easter Id.; shore; Dec. 16, 1904; 1 ♀.

Pachygrapsus plicatus (Milne Edwards).

Pachygrapsus plicatus Kingsley, Proc. Acad. Nat. Sci. Phil., 1880, 200, and synonymy.

Fakarava Id.; Paumotus; outer reef; Oct. 12, 1899; 1 ♂, 1 juv.

Makemo, Paumotus; reef; Oct. 21, 1899; 1 ♂.

Funafuti, Ellice Ids.; reef; Dec. 24, 1899; 1 (broken).

Kusaie, Caroline Ids.; reef; Feb. 8, 1900; 2 ♀.

Pachygrapsus fakaravensis, sp. nov.

Pl. 5, Fig. *1*; Pl. 9, Figs. *6*, *6a*.

Carapace $\frac{9}{10}$ as long as wide, its whole surface crossed by prominent, granulated lines, the granules diminishing in size from front to back, the

lines fringed anteriorly by hairs lying flat on the carapace, and averaging half the width of the space between ridges. Lateral borders parallel and entire.

Front a little over half width of carapace, steeply inclined, its free edge slightly sinuous and as a whole convex. Middle pair of suprafrontal lobes very prominent and elongate, separated from each other and from the lateral lobes by broad, deep, hairy furrows.

Chelipeds of ♂ unequal, much stouter than legs, $1\frac{1}{2}\times$ as long as carapace, and roughened by striae fringed with hair, those on the arm smooth, those on the wrist granulated, short and curved; those on the outer face of the palm coarsely granulate and longitudinal, except near the top, where they are broken into short lines or tubercles. Inner border of ischium and merus denticulate; inner tooth of wrist stout, sharp-pointed. Fingers narrowly gaping, each with a tooth on the basal half much larger than the other teeth; that on the dactylus is proximal to that on the pollex.

Legs smoothly striated, the striae fringed; those on the merus joints transverse, those on the carpal and propodal joints longitudinal. Last three joints bristly and sparsely long-hairy. Merus with a subterminal spine on the anterior margin, and 3 or 4 spines at the distal end of the posterior margin. Second leg longest, twice as long as carapace.

Dimensions: — ♂, length 18 mm., width 19.5 mm.

Type locality: —Fakarava Id., Paumotus; outer reef; Oct. 12, 1899; 1 ♂ (Cat. No. 32,844, U. S. N. M.).

This species is near *P. plicatus* (Milne Edwards),[1] but is distinguished at once by its parallel sides, coarse striation, and great hairiness.

Pachygrapsus minutus A. Milne Edwards.

Pachygrapsus minutus Rathbun, Bull. U. S. Fish Comm. for 1903 (1906) part 3, 840.

Ponape, Caroline Ids.; reef; Feb. 11, 12, 1900; 6 ♂, 1 ♀.

Pachygrapsus longipes Rathbun.

Pachygrapsus longipes Rathbun, Bull. U. S. Fish Comm. for 1903 (1906) part 3, 840, pl. 8, fig. 7.

Fakarava Id., Paumotus; outer reef; Oct. 12, 1899; 1 ♀

Kusaie, Caroline Ids.; reef; Feb. 8, 1900; 3 ♂ 1 ♀.

Ponane Caroline Ids.; reef; Feb. 11, 12, 1900; 2 ♀

[1] Hist. Nat. Crust., 1837, 2, 89.

Ptychognathus easterana, sp. nov.

Pl. 2, Fig. *4;* Pl. 7, Figs. *4, 4 a.*

Male. — Carapace distinctly broader than long, broadest at the posterior of the lateral teeth, slightly convex in an antero-posterior as well as a transverse direction. Surface with a deep median H-form depression, and numerous irregular pits, some of which define the hepatic region. Anterior and lateral portions very finely granulate. Entire upper surface punctate and finely veined.

Fronto-orbital width about $\frac{7}{8}$, and front about $\frac{2}{5}$, the greatest width of the carapace; edge of front sinuous; orbital margin sinuous and directed distinctly backward toward the outer angle.

Two lateral teeth, marked by triangular notches, the posterior the smaller; distance between tips of teeth $\frac{5}{8}$ the distance between the first tooth and the orbital tooth. The branchial ridge arises as far behind the second of the lateral teeth as those teeth are distant from each other; the ridge or granulated line is bent at first strongly inward, then turns strongly backward.

The edge of the front, viewed from before, is curved upward.

The outer maxilliped is much like that of *P. polleni* de Man,[1] but the merus of the endognath has a greater outer extension. The abdomen of the ♂ resembles also that species (*op. cit.*, fig. *20 b*), but the sides of the terminal segment are more divergent at the base.

Chelipeds finely granulate. Wrist with blunt inner angle. Chelae without the patch of hair so conspicuous in some species. Immovable finger with a deep longitudinal groove, which at the base of the finger turns upward on the palm. Fingers with a moderate gape; dactyl with many teeth, the basal one a little larger. Teeth of pollex, 3 large, and 1 or 2 small at basal end. Horny, spoon-shaped extremities of fingers, bordered proximally with a row of short hairs.

Last 3 joints of feet with short setae on the edges; meral joints setose at the extremity, with transverse bands of color.

Dimensions: — ♂, length 10.6 mm., width 12.7 mm.; fronto-orbital width 11 mm., width of front 4.7 mm.

Type locality: — Easter Island; shore; Dec. 20, 1904; 1 ♂ (Cat. No. 32,845, U. S. Nat. Mus.).

[1] Zool. Jahrb., Syst., 1898, **10**, pl. 28, fig. 20 *a*.

The genus Ptychognathus already comprises 12 species and 1 subspecies, all Indo-Pacific. Our species is most closely related to *P. polleni* de Man,[1] from Madagascar, in which the carapace is narrower and front wider, and the branchial ridge arises near the last lateral tooth.

Pseudograpsus albus Stimpson.

Pseudograpsus albus Kingsley, Proc. Acad. Nat. Sci. Phil., 1880, 205.

Fakarava Island, Paumotus; outer reef; Oct. 12, 1899; 1 ♀ juv.

Hemigrapsus elongatus (A. Milne Edwards).

Pl. 2, Fig. *2*; Pl. 7, Figs. *2*, *2 a*.

Heterograpsus elongatus A. Milne Edwards, Nouv. Arch. Mus. Hist. Nat. Paris, 1873, **9**, 317, pl. 17, fig. 5.

Tongabatu, shore; Nov. 22, 1899; 1 ♂.

The fronto-orbital width is a little less than the length, while the greatest width of the carapace exceeds the length. Carapace almost smooth and punctate, the punctae unequal in size and distribution. Posterior angles of mesogastric region deeply marked. The postero-external surface of the branchial region is very steep, and its upper margin is stronger than the lower, and continued nearly to the posterior margin of the carapace. Front very nearly half as wide as the carapace; the lobes of margin are separated by a broader sinus than shown in Milne Edwards's figure. Upper margin of orbit sinuous, a notch at the inner end. Lateral teeth blunt, formed by small triangular notches, the distance between them less than the distance from the first to the orbital angle.

The left cheliped only is present. Merus and carpus unarmed, the inner angle of the latter bluntly rounded. Palm nearly as high as long, and longer than the fingers, measured horizontally. The longitudinal ridge on the lower half of the palm occupies only the proximal half. Fingers strongly gaping. The large patch of thick hair on the inner side of the chela extends half way on the palm and half way along the pollex, and partly along the occludent edges of the fingers, even to the outer side of the articulation of the dactylus.

The ambulatory legs are chiefly light colored, with a few narrow bands of the dark color of carapace and cheliped. They are sparsely furnished with fine hairs.

[1] *Op. cit.*, 1895, **9**, 94; 1898, **10**, pl. 28, fig. 20.

Abdomen of ♂ rather narrow; terminal segment much longer than wide.

Dimensions: — Length of carapace 8.3 mm.; width 9.1 mm.; fronto-orbital width 7.5 mm.; front 4.4 mm.

Sesarma (Sesarma) rotundatum Hess.

Sesarma rotundata Hess, Arch. f. Naturg., 1865, **31**, 1, 149, pl. 6, fig. 9. Miers, Proc. Zool. Soc. London, 1877, 133, 136. De Man, Zool. Jahrb., Syst., 1887, **2**, 654, 682.

Sesarma dentifrons A. Milne Edwards, Nouv. Arch. Mus. Hist. Nat. Paris, 1869, **5**, 31. De Man, Zool. Jahrb., Syst., 1887, **2**, 651; Jahrb. Hamburg. Wiss. Anst., 1896, **13**, 110, pl. 3, figs. 6 and 7.

Sesarma gardineri Borradaile, Proc. Zool. Soc. London, 1900, 593, pl. 42, fig. 8.

Sesarma (Sesarma) gardineri Nobili, Ann. Mus. Nat. Hungarici, 1905, **3**, 497.

Sarmatium faxoni Rathbun, Bull. U.S. Fish Comm. for 1903 (1906), part 3, 841, pl. **7**, fig. 1.

Aruo Atoll, Marshall Group; Jan. 27, 1900; 1 ♂.

Distribution: — Oahu and Marshall Islands (Rathbun); Duke of York Island (Miers); Upolu (A. M. Edwards); Funafuti and Rotuma (Borradaile); Nairai, Fijis (Miers); Seleo, Berlinhafen, New Guinea (Nobili); Sydney (Hess).

I think that Nobili is correct in his surmise that *S. gardineri* Borradaile is the same as *S. rotundatum* Hess. This is also the species that I mistakenly placed in Sarmatium, *S. faxoni* (*loc. cit.*). In the two specimens before me, ♂ and ♀, the anterior $\frac{2}{3}$ of the branchial region is inflated. The ♂ (Aruo) has a soft shell, the lower edge of its front is visible in a dorsal view; in the ♀ (Oahu) this edge is invisible in a dorsal view. In the ♂ the posterior margin of the orbit slopes distinctly outward and backward; in the ♀ almost imperceptibly so.

Neither of these specimens agrees in detail with the type of *S. dentifrons* A.M.Edw. or of *S. rotundatum* Hess as figured by de Man (*loc. cit.*), or with the figure of *S. gardineri* Borradaile, but the differences may be attributed to individual variation.

Sesarma (Sesarma) trapezoideum (Milne Edwards).

Sesarma trapezoidea Milne Edwards, Hist. Nat. Crust., 1837, **2**, 74. De Man, Zool. Jahrb., Syst., 1887, **2**, 654; 1889, **4**, 426, pl. 9, fig. 7.

Fatana River, Tahiti; Nov. 7, 1899; 1 ♂.

Sesarma (Parasesarma) plicatum (Latreille).

Cancer quadratus Fabricius, Suppl. Entom. Syst., 1798, 341. (Not **Cancer quadrata** Meuschen, Mus. Gronov., 1778, 84, which is an indeterminable species of Sesarma (?) from America, nor **Cancer quadratus** Fabricius, Mant. Ins., 1787, **1**, 315, which is an Ocypode.)

Ocypode plicata Latreille, Hist. Nat. Crust., 1803, **6**, 47.

Sesarma quadratum Alcock, 1900, **69**, 413.

Kusaie, Carolines; Feb. 9, 1900; 4 ♂, 4 ♀, 5 juv.

Small specimens, the largest, an adult ♀, measuring only 14.5 mm. in width. Legs marked with irregular transverse stripes of color.

Sesarma (Parasesarma) carolinensis, sp. nov.

Pl. 5, Figs. *2*, *2 a*; Pl. 9, Fig. *1*.

Carapace considerably broader than long, and broader anteriorly than posteriorly. Surface almost smooth to the naked eye, but under the lens crossed, except in the middle portion, by fine transverse rugae, which are for the most part short, but the branchial region has 5 or 6 long lines, and the posterior part has some longish lines; surface sparingly punctate. Regions faintly indicated, except the anterior portion of the mesogastric. No lateral teeth.

Front $\frac{3}{5}$ of the fronto-orbital width, vertical; 4 superior lobes subequal and well separated; sides of front parallel; lower margin in front view for the most part straight, but toward the ends rounding up to the lateral margins; in dorsal view, slightly bilobed. Superior margin of orbit sloping almost directly backward to the orbital tooth.

Merus joint of chelipeds with a large laminate anterior expansion, the edge of which is denticulate; the denticles are larger, more irregular, and more projecting on the distal border of the lamina. Upper surface of arm and wrist rugose. Inner angle of wrist blunt. Outer surface of hand for the most part smooth and covered with large punctae; upper part finely granulate, the granules proximally forming rugae; 2 oblique pectinated ridges not parallel to the border of the hand. The upper surface of the dactyls is marked by 14 or 15 transverse ridges, each of which is longer than the intervals between them, and is divided lengthwise by a groove. Each intervening space is occupied by an elevation, sub-triangular in shape, the base of each triangle being at the proximal end of the space. The fingers of the ♂ have a very slight gape; the teeth of the dactylus are smaller than

those of the pollex; the largest tooth of the former lies near its base, of the latter near its middle. Inner surface of palm very finely granulated; a row of granules near and parallel to the distal end of the palm.

Ambulatory legs of moderate length and width. Posterior margin of merus joints unarmed; anterior margin with a sharp sub-distal spine. Last 3 joints furnished with a few stiff bristles and long hairs; dactyli slender, nearly as long as propodi. The legs have irregular transverse bands of color.

Dimensions:— Length 7 mm.; fronto-orbital width 9.7 mm.; posterior width 8.5 mm.; width of front 5.5 mm.

Type locality: — Kusaie, Carolines; Feb. 9, 1900: 1 ♂ (Cat. No. 32,861, U. S. N. M.).

This species most closely resembles *Sesarma* (*Parasesarma*) *lenzii* de Man[1]; but our species has the lamina of the arm-joint less projecting distally, the palm smoother inside and out, the pectinated ridges not parallel to the proximal margin of the palm, and the projections of the upper margin of the movable finger of different shape and not obliquely placed.

Sesarma (Holometopus) obtusifrons Dana.

Sesarma (Sesarma) obtusifrons de Man, Zool. Jahrb., Syst., 1895, **9**, 161; 1898, **10**, pl. 29, fig. 31.

Niue; Nov. 25, 1899; 1 ♂.

This species is variable in its proportions. In the ♂ from Niue the length is to the width as 1:1.35; in a ♂ from Hilo as 1:1.25; while de Man (*loc. cit.*) gives measurements of males, which have a width of 1.31 and 1.34 x their length, respectively.

Abdomen of ♂ from Niue a little narrower than those from Hilo or than that figured by de Man (*op. cit.*, fig. 31*b*).

Sesarma (Holometopus) villosum A. Milne Edwards.

Sesarma villosum A. Milne Edwards, Nouv. Arch. Mus. Hist. Nat. Paris, 1869, **5**, 31.
Sesarma villosa de Man, Zool. Jahrb., Syst., 1887, **2**, 644.
Sesarma (Sesarma) villosa de Man, Zool. Jahrb., Syst., 1895, **9**, 153; 1898, **10**, pl. 29, fig. 30.

Kusaie, Carolines; Feb. 9, 1900; 1 ♂.

[1] Zool. Jahrb., Syst., 1895, **9**, 193; 1898, **10**, pl. 30, fig. 35.

Helice leachii Hess.

Helice leachii Hess, Arch. f. Natur., 1865, **31**, 1, p. 153.
Helice pilimana A. Milne Edwards, Nouv. Arch. Mus. Hist. Nat. Paris, 1873, **9**, 313, pl. 18, fig. 1.
Helice leachi de Man, Zool. Jahrb., Syst., 1887, **2**, 690, 702.

Kusaie, Carolines; Feb. 9, 1900; 1 ♂.

Oho Sima, Tokaito coast, Japan; F. Sakamoto coll.; 2 ♂, 1 ♀ (U. S. Nat. Mus.).

In the four specimens before me, the longitudinal ridge on the lower third of the outer face of the palm is very short, present on the proximal end of the palm only; the patch of hair at the base of the fingers is also much restricted, not extending back on the palm as in fig. 1 *a* of Edwards (*loc. cit.*), but confined to the base of the thumb.

Length of largest ♂ (Japan) 22 mm.; greatest width 25.2 mm.

Cyclograpsus longipes Stimpson.

Cyclograpsus longipes de Man, Zool. Jahrb., Syst., 1896, **9**, 355; 1898, **10**, pl. 32, fig. 43.

Papeete, Tahiti; reef; Sept. 28, 1899; 1 ♀ juv.
Makemo, Paumotus; reef; Oct. 21, 1899; 1 ♀.
Wailangilolu, Fiji Ids.; Nov. 20, 1897; 1 ♂.

Cyclograpsus parvulus de Man.

Cyclograpsus parvulus de Man, Zool. Jahrb., Syst., 1896, **9**, 350; 1898, **10**, pl. 32, fig. 42.

Fakarava Id., Paumotus; outer reef; Oct. 12, 1899; 1 ♀.

Plagusia speciosa Dana.

Plagusia speciosa Miers. Ann. Mag. Nat. Hist., 1878 (5), **1**, 151.

Makemo Id., Paumotus; Oct. 21, 1899; 1 ♂.
The type is from Waterland Id., Paumotus.

Plagusia dentipes (de Haan).

Plagusia dentipes Miers, Ann. Mag. Nat. Hist., 1878 (5), **1**, 152.

Easter Id.; shore; Dec. 21, 1904; 2 ♂, 1 ♀.

Percnon planissimum (Herbst).

Liolophus planissimus Alcock, 1900, **69**, 439.

Fakarava Id., Paumotus; outer reef; Oct. 12, 1899; 1 ♀ juv.

PILUMNIDAE.

Carpilius maculatus (Linnaeus).

Carpilius maculatus Alcock, 1898, **67**, 79.

Papeete, Tahiti; Oct. 2, 1899; 1 ♀.
Fakarava Id., Paumotus; outer reef; Oct. 11, 1899; 1 ♀.

Carpilius convexus (Forskål).

Carpilius convexus Alcock, 1898, **67**, 80.

Makemo, Paumotus; reef; Oct. 21, 1899; 1 juv.

Carpilodes tristis Dana.

Carpilodes tristis Alcock, 1898, **67**, 82.

Fakarava Id., Paumotus; outer reef; Oct. 12, 1899; 1 ♂.

Carpilodes rugatus (Latreille).

Carpilodes rugatus Alcock, 1898, **67**, 84.

Fakarava Id., Paumotus; outer reef; Oct. 12, 1899; 1 ♂, 1 ♀.
Makemo, Paumotus; reef; Oct. 21, 1899; 1♂, 1 ♀.
Papeete, Tahiti; shore; Nov. 9, 1899; 2 ♂.
Funafuti, Ellice Id.; reef; Dec. 24, 1899; 3 ♂.

Carpilodes monticulosus A. Milne Edwards.

Carpilodes monticulosus Alcock, 1898, **67**, 86.

Fakarava Id., Paumotus; outer reef; Oct. 12, 1899; 2 ♂, 2♀.
Makemo, Paumotus; reef; Oct. 21, 1899; 1 ♀.

Atergatis ocyroe (Herbst).

Atergatis floridus Alcock, 1898, **67**, 98, and synonymy.

Borabora, Society Ids.; shore and fringing reef; Nov. 17, 1899; 1 ♀.

Platypodia anaglypta (Heller).

Lophactaea anaglypta Alcock, 1898, 67, 102.

Fakarava, Paumotus; shoal in lagoon; Oct. 11, 1899; 1 ♀.

Fakarava, Paumotus; outer reef; Oct. 12, 1899; 1 ♀.

Platypodia digitalis, sp. nov.

Pl. 1, Fig. *6*; Pl. 9, Figs. *4*, *4a*.

Carapace narrower than in most Indo-Pacific species of this genus. Interregional furrows filled with a short tomentum; a few long hairs scattered on the carapace. Granules of surface small, scabrous, and sparsely distributed. Surface behind middle of cardiac region smooth. A median furrow forms two lobules on the broad part of the mesogastric area; protogastric area without longitudinal division. A thin, light-colored rim borders the front, orbits, and antero-lateral margins, and is marked by a closed fissure on the median line, two on the orbit and three on the sides.

Chelipeds heavy, unequal. Outer surface of palms covered with sharp tubercles arranged somewhat in rows; upper edge not cristate, but armed with 5 or 6 tubercles. Fingers very short and stout; pollex shorter than its width at base; tips very stumpy in the large claw, slenderer and more acute in the small claw; prehensile edges of both fingers with a broad tooth; inner and outer surfaces with one or two tufts of hair. On account of the short thumb, the movable finger is more vertical than commonly in the genus.

Ambulatory legs of moderate width, upper edges acute, but not cristate.

Dimensions: — Adult ♀, length 8.4 mm., width 11.5 mm.

Distribution:—

Papeete, Tahiti; reef; Nov. 28, 1899; 1 ♀.

Kusaie, Carolines; 1900; 1 ♀ type (Cat. No. 32,846, U. S. N. M.).

This species belongs to the *granulosa* group of Alcock (1898, 67, 100), in which the upper border of the hand is not cristate, but *P. digitalis* is separated from others of the group by having the pollex broader than long, the protogastric lobes not longitudinally divided, the ambulatory legs not cristate.

Zosimus aeneus (Linnaeus).

Zozymus aeneus Alcock, 1898, 67, 104.

Makemo Id., Paumotus; Oct. 20, 1899; 1 ♀.

Lophozozymus dodone (Herbst).

Lophozozymus dodone Alcock, 1898, **67**, 108.

Funafuti, Ellice Ids.; reef; Dec. 24, 1899; 1 ♀ juv.

This small ♀ (5.2 x 8.7 mm.) is not typical, the hands are narrower than all other, but larger, specimens examined, the immovable finger is more elongate, and the palm is not cristate beneath. In other respects the crab might easily be a *dodone;* the outline and proportion of the carapace are normal, the central portion is very smooth, there are short ridges on the side-teeth T and S (of Dana) and on the hepatic region and just inside of T.

Leptodius sanguineus (Milne Edwards).

Xantho (Leptodius) sanguineus Alcock, 1898, **67**, 119.

Nukuhiva, Marquesas Ids.; shore, seine; Sept. 15–17, 1899; 6 ♂, 3 ♀ (2 ovig.).

Mohican Reef, Rangiroa Id.; Sept. 23, 1899; 3 ♀ (1 ovig.).

Papeete, Tahiti; reef; Sept. 28, 1899; 1 ♂.

Makatea Id.; shore; Oct. 6, 1899; 1 ♂.

Fakarava Id., Paumotus; outer reef; Oct. 12, 1899; 2 ♂, 1 ♀, ovig.

Makemo, Paumotus; reef; Oct. 21, 1899; 3 ♂.

Borabora, Society Ids.; shore and fringing reef; Nov. 17, 1899; 1 ♂.

Tongatabu; shore; Nov. 29, 1899; 1 ♂.

Tarawa Id., Gilbert Group; shore; Jan. 3, 1900; 1 ♂.

Manga Reva; Feb. 3, 1900; 1 ♂.

Ponape, Caroline Ids.; reef; Feb. 12, 1900; 1 ♂.

Aino Atoll; 1900; 1 ♂.

Leptodius gracilis (Dana).

Chlorodius gracilis Dana, Crust. U. S. Expl. Exped., 1852, **1**, 210; atlas, 1855, pl. 11, fig. 13.

Kusaie, Caroline Ids.; reef; Feb. 8, 1900; 4 ♂, 2 ♀ (1 ovig.).

Leptodius efferens, sp. nov.

Pl. 1, Fig. *11*; Pl. 7, Figs. *6*, *6 a*.

A small species. Carapace broadly oval, the front not projecting beyond the curve of the antero-lateral borders. Regions marked by fine grooves.

Surface finely granulous, with a few ill-marked ridges, the posterior-middle portion nearly smooth. Fronto-orbital width $\frac{2}{3}$ of entire width; front $\frac{1}{2}$ of the former, convex, with a median V-shaped notch and a small outer tooth. Front separated from orbit by a notch and a furrow. Orbits large, nearly filled by the eyes, and having a small notch above and another just below the outer angle. Antero-lateral teeth 5, the second rounded and partly fused with the small first or orbital tooth; third and fourth of good size, fifth small. Short grooves run inward from the lateral sinuses. Carapace equally wide at the fourth and fifth teeth. Margin of front, orbits, and teeth granulous.

The basal segment of the antennæ just meets the downward prolongation of the front. The ridge on the palate is well marked anteriorly, and the notch in the epistome, just outside the ridge, is broad and deep.

Chelipeds unequal in both sexes, short, stout, granulate. The wrist has a distal groove and a stumpy inner tooth. Fingers black, except at the tips, where they are brown, with a white rim on the edge of the shallow spoon. The color of the pollex runs back a little on the palm, more so in the ♂ than in the ♀; the fingers have shallow grooves and are finely granulate at the base; in the ♂ the fingers gape and the prehensile teeth are small; in the ♀, the fingers do not gape, and in the large claw they bear rather large teeth which dovetail together. The tips of the fingers are not enlarged and are hollowed out, but not hooflike.

Ambulatory legs missing.

Last 2 segments of ♂ abdomen short and broad; abdomen narrowest at distal end of the third or compound segment.

Dimensions: — ♂ type, length 3.7 mm., width 5.8 mm., fronto-orbital width 4.3 mm., width of front 2 mm.

Type locality: — Ponape, Carolines; reef; Feb. 11, 1900; 1 ♂ type, 1 ♀ (Cat. No. 32,847, U. S. N. M.).

Differs from typical Leptodius in its more regularly oval form, in the conspicuous granulation of chelipeds and carapace, and in the greater development of the palatal ridge.

Xanthodius cristatus (Borradaile).

Leptodius (Xanthodius) cristatus Borradaile, Fauna Maldive Arch., 1902, **1**, part 3, 252, text fig. 51.

Makemo, Paumotus; reef; Oct. 21, 1899; 1 ♂, 2 ♀.

Ponape, Carolines; reef; Feb. 11, 1900; 2 ♀ ovigerous.

1 ♂, 3 ♀ are of the size described by Borradaile, and agree with his description but not entirely with his figure. The carapace is widest at the penultimate tooth, the trough on the propodal segments of the legs extends the whole length of the segment, but the propodi are shorter and dactyli longer than shown in the figure. A larger ♀, 5.3 × 8 mm., soft shell, from Makemo, has more marked characteristics. The surface is more uneven, the areolae being more raised, the depressions on the upper surface of the palms are very deep, as on the legs.

Cycloxanthops cavatus, sp. nov.

Plate 5, Fig. *8*; Pl. 6, Figs. *3*, *3a*.

Carapace about ¾ as long as broad; posterior half level, anterior half strongly deflexed; surface very uneven. On the anterior half are six longitudinal elevations; two small elevations on inner branchial region; a transverse ridge runs inward from the third and fourth teeth of the sharp lateral border. Between the first and second teeth (orbital angle not included), and just above the margin, there is a deep circular pit; less striking depressions separate the other teeth. Surface closely granulate.

Front deflexed, margin slightly convex, median notch small, orbital angle separated by a rectangular notch.

Basal joint of antenna touching the front with its inner angle; movable portion crowded between the front and the orbital angle. Anterior margin of merus of maxilliped concave; outer angle a produced rounded lobe.

Only the right cheliped is present; its surface is closely granulate and very uneven, like that of the carapace. Upper surface of wrist and hand covered with depressions separated by irregular ridges, which form three nodulous crests on the hand; outer surface with two additional granulate ridges. Fingers short, light-colored, grooved, not gaping, prehensile teeth low, upper edge of dactylus thin, sharp.

Merus of legs with a thin upper crest; carpus and propodus bicristate.

Dimensions: — ♂ type, length 4.7 mm., width 6.6 mm.

Type locality: — Fakarava Island, Paumotus; outer reef; Oct. 12, 1899; 1 ♂ (Cat. No. 32,848, U. S. N. M.).

This species has much the shape of *C. punctatus* (Haswell),[1] but the surface is more uneven, and the front is distinctly separated from the inner angle of the orbit, which is not the case in *punctatus*.

Etisus laevimanus Randall.

Etisus laevimanus Alcock, 1898, **67**, 131.

Borabora, Society Islands; shore and fringing reef; Nov. 17, 1899; 1 ♂.

Lifu; shore; Dec. 13, 1899; 1 ♂.

Etisodes electra (Herbst).

Etisodes electra Alcock, 1898, **67**, 133.

Fakarava Id., Paumotus; outer reef; Oct. 12, 1899; 1 ♂.

Tara-Tari Id.; shore, reef; Jan. 6, 1900; 4 ♂, 3 ♀.

Actaea tomentosa (Milne Edwards).

Actaea tomentosa Alcock, 1898, **67**, 140.

Ena, Tonga Group; reef; Nov. 20, 1899; 2 ♂, 1 ♀.

Ponape, Caroline Ids.; reef; Feb. 11, 12, 1900; 5 ♂, 7 ♀ (3 ovig.).

Actaea affinis (Dana).

Actaeodes affinis Dana, Crust. U. S. Expl. Exped., 1852, **1**, 197; atlas, 1855, pl. 11, fig. 3.

Makemo, Paumotus; reef; Oct. 21, 1899; 2 ♂.

Actaea hirsutissima (Rüppell).

Actaea hirsutissima Alcock, 1898, **67**, 141.

Papeete, Tahiti; shore; Nov. 9, 1899; 1 ♀.

Borabora, Society Islands; shore and fringing reef; Nov. 17, 1899; 3 ♂, 2 ♀, 1 juv.

[1] Proc. Linn. Soc. N. S. Wales, 1881, **6**, 752.

Actaea remota, sp. nov.

Pl. 1, Fig. *9*; Pl. 7, Fig. *1*.

Carapace broad, about $\frac{2}{3}$ as long as broad, lobulated all over, lobules low and flat, the grooves between them smooth and covered with short hair, the lobules themselves covered with small pearly granules, the narrow interspaces filled with hair no higher than the granules and similar to that between the lobules. Mesogastric region undivided; protogastric regions divided lengthwise into two lobules. Cardiac region undivided. Branchial regions each with about nine lobules. Orbital region marked off by a furrow. Intestinal region more finely granulate.

Front strongly deflexed, moderately arched, median emargination not discernible, owing to a break in the carapace. Orbit with one fissure below, two above. Lateral lobes four, shallow, the first united with the orbital angle, the grooves continued on the under surface, which is finely granulate and almost naked.

The left cheliped is missing. In the right one, the outer surface of the wrist and the proximal end of the upper surface of the hand are indistinctly lobulate. The granulation of wrist and hand is less dense, the hairs more numerous. Dactylus granulous and hairy at base. Both fingers white, hollowed at tip. Legs granulate and pilose, but not lobulate; carpal joints with a longitudinal groove.

Dimensions: — Type, length 6 mm., width 8.7 mm.

Type locality: — Easter Island; shore; Dec. 20, 1904; 1 ♂ (Cat. No. 32,849, U. S. N. M.).

This species appears to be nearest *A. lata* Borradaile,[1] which, however, has long hairs mixed with the short ones, and the fingers pointed and black in color.

Actaea rufopunctata (Milne Edwards).

Actaea rufopunctata Alcock, 1898, **67**, 142.

Papeete, Tahiti; reef; Sept. 28, 1899; 1 ♀.
Makemo, Paumotus; reef; Oct. 21, 1899; 1 ♂.
Funafuti, Ellice Id.; shore; Dec. 25, 1899; 1 ♂.

[1] Fauna & Geog. Maldive & Laccadive Arch., 1902, **1**, pt. 3, 255, text fig. 53.

Actaea cavipes (Dana).

Pl. 1, Fig. *2*.

Actaea cavipes Alcock, 1898, **67**, 147.

Rangiroa Id.; beach; Sept. 21, 1899; 1 ♂.
Fakarava, Paumotus; shoal in lagoon; Oct. 11, 1899; 3 ♂.
Fakarava; outer reef; Oct. 12, 1899; 2 ♂, 1 ♀.
Borabora Ids., Society Group; fringing reef; Nov. 17, 1899; 5 ♂, 2 juv.
Funafuti, Ellice Ids.; reef; Dec. 24, 1899; 1 ♂, 1 ♀.
Tari-Tari Id.; shore, reef; Jan. 6, 1900; 2 ♂, 3 ♀.

Daira perlata (Herbst).

Daira perlata Alcock, 1900, **67**, 155.

Papeete, Tahiti; reef; Sept. 28, 1899; 3 juv.

Xanthias lamarckii (Milne Edwards).

Xanthodes lamarckii Alcock, 1898, **67**, 157.

Papeete, Tahiti; reef; Sept. 28, 1899; 1 ♂, 1 ♀.
Fakarava Id., Paumotus; outer reef; Oct. 12, 1899; 1 ♂, 4 ♀ (1 ovig.), 1 juv.
Makemo, Paumotus; reef; Oct. 21, 1899; 2 ♂, 2 ♀.
Borabora Id., Society Group; fringing reef; Nov. 17, 1899; 2 ♂, 2 ♀.

Xanthias ponapensis, sp. nov.

Pl. 7, Figs. *5*, *5 a*.

The carapace is almost smooth, punctate, microscopically granulous, granules more discernible along the antero-lateral margin. Orbital region marked off by a groove, gastric region and its subdivisions well delimited, otherwise the carapace is scarcely divided. Frontal lobes faintly sinuous, their outer angles rectangular, and separated from the orbit by a rectangular notch. Antero-lateral margin thick; teeth four (besides the orbital angle), the first minute and distant from the orbit, the third most prominent.

Chelipeds unequal, surface similar to that of the carapace; merus roughly granulous above, wrist and hand smooth to the eye, the larger punctae of the hand arranged somewhat in longitudinal lines. Fingers stout, gaping at

base in larger chela, color almost black, with tips lighter, color prolonged very little on the palm and terminating in an oblique line. Legs hairy; merus joints spinulous above.

Dimensions: — ♂ type, length 6.5 mm., width 9.7 mm., fronto-orbital width 5.7 mm.

Distribution: — Papeete, Tahiti; shore; Nov. 9, 1899; 4 immature.

Ponape, Carolines; reef; Feb. 11, 1900; 2 ♂ (1 ♂ is type, Cat. No. 32,850, U. S. N. M.).

The young specimens from Papeete show much rougher carapace and chelipeds than the adult, the roughness diminishing regularly with age. They measure respectively 6.4, 5.5, 5.2, and 5 mm. in width. The first-mentioned has the larger palm smooth outside, a little granulous above, smaller cheliped missing; No. 2 has the larger palm also smooth outside, but more granulous above, the smaller palm distinctly granulous outside and above; No. 3 has the larger palm a little rough outside as well as above, the smaller palm very granulous; in No. 4 both palms are very rough, the smaller the rougher. One would not believe the smallest specimen to be the same species as the type, were there not intermediate stages.

This species is near *X. flavescens* Rathbun,[1] from the Hawaiian Ids., but the latter is wider and more areolated, the dark color of the pollex runs far back and up on the palm, and the legs are nearly naked.

Xanthias notatus (Dana).

Xanthodes notatus Alcock, 1898, **67**, 158.

Fakarava Id., Paumotus; outer reef; Oct. 12, 1899; 19 ♂, 24 ♀ (2 ovig.).
Makemo, Paumotus; reef; Oct. 21, 1899; 16 ♂, 13 ♀ (4 ovig.).

Xanthias canaliculatus Rathbun.

Xanthias canaliculatus Rathbun, Bull. U. S. Fish Comm. for 1903 (1906) part 3, 856, text fig. 17, pl. 9, fig. 12.

Makemo, Paumotus; reef; Oct. 21, 1899; 1 ♂, 1 ♀.

[1] Bull. U. S. Fish Comm. for 1903 (1906), part 3, 855, text fig. 15, pl. 9, fig. 11.

Chlorodiella niger (Forskål).

Chlorodius niger Alcock, 1898, **67**, 160.

Rangiroa Id.; Mohican Reef; Sept. 23, 1899; 1 ♂, 1 ♀.
Fakarava, Paumotus; shoal in lagoon; Oct. 11, 1899; 1 ♂, 1♀ (ovig.)
Fakarava, Paumotus; outer reef; Oct. 12, 1899; 6 ♂, 8 ♀ (4 ovig.).
Makemo, Paumotus; reef; Oct. 21, 1899; 8 ♂, 6 ♀.
Borabora Id., Society Group; fringing reef; Nov. 17, 1899; 2 ♂, 2 ♀.
Funafuti, Ellice Id.; reef; Dec. 24, 1899; 2 ♂, 2 ♀, 1 juv.
Tari-Tari Id.; shore, reef; Jan. 6, 1900; 4 ♂, 2 ♀.
Kusaie, Carolines; 1900; 1 ♂, 2 ♀.

Chlorodiella laevissima (Dana).

Chlorodius laevissimus Alcock, 1898, **67**, 161.

Rangiroa Id.; Mohican Reef; Sept. 23, 1899; 3 ♂, 1♀.
Papeete, Tahiti; reef; Sept. 28, 1899; 3♀ (1 ovig.).
Papeete, Tahiti; shore; Nov. 9, 1899; 2 ♂.
Fakarava Id., Paumotus; outer reef; Oct. 12, 1899; 1 ♂, 3 ♀ (1 ovig.).
Makemo, Paumotus; reef; Oct. 21, 1899; 1 ♂, 1 ♀ (ovig.).
Funafuti, Ellice Is.; reef; Dec. 24, 1899: 16 ♂, 13 ♀, 3 juv.
Tari-Tari Id.; shore; reef; Jan. 6, 1900; 1 ♂, 1 ♀.

Phymodius ungulatus (Milne Edwards).

Pls. 3, 4.

Phymodius ungulatus Alcock, 1898, **67**, 162.
Phymodius monticulosus Alcock, *op. cit.*, 163.
Phymodius obscurus Rathbun, Bull. U. S. Fish Comm. for 1903 (1906), 196, part. 3, 858.

Rangiroa Id.; Mohican Reef; Sept. 23, 1899; 2 ♂ ♀.
Papeete, Tahiti; reef; Sept. 28, 1899; 1 juv.
Fakarava, Paumotus; shoal in lagoon; Oct. 11, 1899; 2 ♂, 2 ♀.
Fakarava, Paumotus; outer reef; Oct. 12, 1899; 10 ♂, 14 ♀ (4 ovig.), 7 juv.
Makemo, Paumotus; reef; Oct. 21, 1899; 3 ♂, 1 ♀.
Borabora, Society Ids.; shore and fringing reef; Nov. 17, 1899; 1 ♂, 2 ♀.
Tongatabu; reef and shore; Nov. 30, 1899; 1 ♂.
Funafuti, Ellice Id.; reef; Dec. 24, 1899; 1 ♂, 1 ♀ juv.

Tari-Tari Id.; shore and reef; Jan. 6, 1900; 1 ♂, 2 ♀.

Kusaie, Carolines; 1900; 1 ♂, 3 ♀ (ovig.).

I find it necessary on examination of considerable material to unite the *ungulatus* form with the *monticulosus* or *obscurus* form of Phymodius, or, in lieu of this, to make five or six intergrading sub-species.

In the absence of type specimens it is almost impossible to apply with certainty the specific names already given.

The series before me is far from complete, but it indicates that each form of cheliped described by Dana and others may be attached to any form of carapace; and that carapaces with similar areolation vary in relative width and in the width of the front.

I have thought it desirable to tabulate some of these variations: —

VARIATIONS IN PHYMODIUS UNGULATUS.

Locality.	Sex.	Length in mm.	Width in mm.	Width of front, orbital angle excluded.	Mesogastric region.	Protogastric region.	Lateral teeth.	Chelipeds.	Palms.	Tubercles of palm.	Fingers.	Gape.	Spoons.	Equivalent to.	Figure.
Borabora	♂	16.2	23.3	7.3	Undivided	Without cross markings	Obtuse	Very unequal	Widen much distally	Flat	Little curved	Narrow	Shallow	*ungulatus* Dana and M. Edw.	Pl. 3, fig. 1, 1*c*
Borabora	♀	10.4	14.8	4.8	"	Cross grooves	1–3 obtuse 4–5 acuminate	Equal	Sides subparallel	Sharp	"	"	"		Pl. 4, fig. 2, 2*c*
Oahu	♂	13.5	19.1	7.2	3-divided	"	Obtuse	Unequal	Widen moderately distally	Subacute	Much curved	"	Deep	*ungulatus* var. *gracilis* Dana	
Bonin Ids.	♂	16.9	24	8.5	"	"	1–3 obtuse 4–5 hooked	Little unequal	Sides subparallel	Acute	"	Wide	"	*monticulosus* Dana *areolatus* A. & W.	Pl. 3, fig. 3, 3*c*
Fakarava	♂	11.2	15.6	6	"	"	Sharp	Equal	"	Spiniform	"	"	"	"	Pl. 4, fig. 3, 3*a*
Fakarava	♂	19.7	28.4	9.5	"	Nodulous	Obtuse	Very unequal	Widen much	Subobsolete	"	"	"	*monticulosus* Alc.	Pl. 4, fig. 1, 1*a*
Tari-Tari	♂	18	25.4	9.2	Scarcely divided	Without cross markings	1–2 obtuse 3–5 subacute	"	Sides subparallel	Subobsolete on larger, acute on smaller.	Little curved	"	Shallow	"	Pl. 4, fig. 4, 4*a*
Tongatabu	♂	14.9	20.8	7.5	3-divided	"	Obtuse	"	Widen much	Obsolete	"	Narrow	"	*obscurus* Lucas	Pl. 3, fig. 2, 2*a*
Oahu	♂	12.5	18.7	6.5	"	"	"	"	Widen little	"	"	"	"		
Honolulu	♂	13	20.5	7.4	Undivided	"	"	"	Widen much	Subobsolete	Much curved	Wide	Deep		Pl. 3, fig. 4, 4*a*

Chlorodopsis venusta, sp. nov.

Pl. 1, Fig. 5.

Carapace with a few, rather long, scattered hairs; legs with similar but more numerous hairs, not concealing the sculpture; chelipeds almost naked.

Posterior third of carapace not areolated. Anterior $\frac{2}{3}$ divided by smooth grooves into regions and sub-regions, which are covered with very numerous sharp granules; these granules become much finer on the posterior third.

Front cut into two rounded denticulate lobes, and outside of each a narrow acute tooth. The two upper fissures of the orbit are faintly marked.

The antero-lateral margin has besides the small orbital angle, four teeth, the last three of which are similar, curved, spiniform. Tooth E of Dana is thick, acute, and fused with the adjacent area 1 L; tooth N bears a few denticles on its sides. 2 L, 3 L, and 4 L are distinct; 5 L and 6 L are only partially separated from each other. 1 L, 3 L, 4 L, and 1 R, the submarginal areas, are high and rough with granules, but not spined. There is a sharp subhepatic denticle. While the outer angle of the basal antennal joint is prolonged into the orbital hiatus, the movable part of the antenna is not excluded from the orbit.

Chelipeds unequal. Arm irregularly spined on anterior margin, sharply rough above, finely granulate outside. Wrist coarsely and sharply granulate, two spines at inner angle. Hands covered with crowded granules, which are finer below and on the inside. Fingers gaping, three teeth on prehensile edge of each, dactylus with denticles outside towards the base.

Legs spinulous above.

Color in spirit mottled, variable, the dark part sometimes forming a variable but bisymmetrical band from front to back. Legs with a few transverse dark stripes. Fingers brown or black with light tips.

Dimensions: — Type ♂, length 6.1 mm., width 10.3 mm.

Distribution: —

Fakarava Id., Paumotus; outer reef; Oct. 12, 1899; 3 ♂.

Makemo, Paumotus; reef; Oct. 21, 1899; 9 ♂, 6 ♀, (1 ♂ type, Cat. No. 32,851, U. S. N. M.).

Funafuti, Ellice Group; reef; Dec. 24, 1899; 1 juv.

This species is closely related to *C. melanochira* A. Milne Edwards[1] and to *C. wood-masoni* Alcock.[2] It is smaller, less hairy, and more delicately marked than *C. melanochira*; the second antero-lateral tooth (the first after the orbital angle) is not separated from the adjoining area; the fourth and fifth teeth are simple, and the hind part of the carapace is not grooved as in that species. *C. wood-masoni* has fewer denticles on the frontal lobes (7 instead of 15 to 20); a spiniform second tooth; a spine on each of the four submarginal areas; fewer tubercles or granules on the chelipeds.

Chlorodopsis spinipes (Heller).

Pl. 2, Fig. *5*.

Chlorodopsis spinipes Alcock, 1898, **67**, 169.

Rangiroa Id.; Mohican Reef; Sept. 23, 1899; 1 ♂, 1 ♀.

Fakarava Id., Paumotus; outer reef; Oct. 12, 1899; 4 ♀ (3 ovig.).

Makemo, Paumotus; reef; Oct. 21, 1899; 2 ♀.

Borabora Id., Society Group; fringing reef; Nov. 17, 1899; 5 ♂, 8 ♀.

Funafuti, Ellice Id.; reef; Dec. 24, 1899; 1 ♂, 2 ♀.

All the specimens have three antero-lateral spines, besides the orbital spine; just back of the latter is a small subhepatic spine.

Chlorodopsis scabricula (Dana).

Pl. 1, Fig. *3*; Pl. 9, Fig. *5*.

Chlorodopsis scabricula Rathbun, Bull. U. S. Fish Comm. for 1903 (1906), part 3, 859.

Papeete, Tahiti; reef; Sept. 28, 1899; 2 ♀ immature, 1 young.

These specimens are the same species as the young ♂ from Honolulu, which I referred to *C. scabricula* (*loc. cit.*), and I think that they are probably Dana's *scabricula*.

The four spines of the side margin are similar to each other (E and S of Dana), being smaller than the others. The four lobules adjacent to these spines are high and their summits are denticulated.

[1] Nouv. Arch. Mus. Hist. Nat. Paris, 1873, **9**, 228, pl. 8, fig. 5.

[2] Journ. Asiat. Soc. Bengal, 1898, **67**, 170. Illus. Zool. Investigator, Crust., pt. 7, pl. 37, fig. 7.

In the two larger specimens, the outer angle of the basal antennal joint falls short considerably of the end of the inner suborbital tooth, while in the two smaller specimens that angle reaches the end of the tooth.

Cyclodius ornatus Dana.

Pl. 5, Fig. *5;* Pl. 7, Fig. *8.*

Cyclodius ornatus Dana, Proc. Acad. Nat. Sci. Phil., 1852, 80; Crust. U. S. Expl. Exped., 1852, **1**, 223; atlas, 1855, pl. 12, figs. 11 *a–g.*
Chlorodopsis (Cyclodius) ornata Alcock, 1898, **67**, 171.

Fakarava Id., Paumotus; outer reef; Oct. 12, 1899; 1 ♀ immature.
Papeete; shore; Nov. 9, 1899; 1 ♂ juv.
Tari-Tari Id.; shore, reef; Jan. 6, 1900; 1 ♀ immature, 1 ♂ juv.

The largest specimens measure as follows: —
♀, Tari-Tari, length 6.7 mm., width 8.8 mm., proportion 1 : 1.31.
♀, Fakarava, length 6 mm., width 7.7 mm., proportion 1 : 1.28.

Lateral teeth N, T, and S are long, slender, and alike; tooth E is similar, but smaller in three specimens; in the young ♂ from Tari-Tari (4 mm. wide) tooth E is not spiniform. Subdivisions of gastric region well marked, except in the last-mentioned specimen. Each middle lobe of the front has 8 or 10 denticles, each lateral lobe 3 or 4.

Fig. 11 *f* of Dana represents the abdomen of a ♀.

Cyclodius gracilis Dana.

Pl. 1, Fig *10;* Pl. 7, Fig. *7.*

Cyclodius gracilis Dana, Proc. Acad. Nat. Sci. Phil., 1852, 80; Crust. U. S. Expl. Exped., 1852, **1**, 224; atlas, 1855, pl. 13, figs. 12 *a* and *b.*

Funafuti; reef; Dec. 24, 1899; 2 ♂, 1 ♀, all young.

The largest specimen, the ♀, measures 3.8 × 5.5 mm., or a proportion of 1 : 1.44. This is a greater width than that given by Dana in the text, but corresponds to his figure. While strongly resembling *C. ornatus*, it is less deeply areolated (specimens of nearly equal size compared), the front as a whole is less prominent, its margin more finely denticulated, its outer lobules are smaller.

Pilodius paumotensis, sp. nov.

Pl. 8, Figs. *2*, *2 a*, *2 b*.

Surface covered with a thin coat of soft, downy hairs, some of which are very long, and most of which proceed from fine granules. Carapace $\frac{2}{3}$ as long as it is broad, regions plainly demarcated. Front convex, with a large, median U-shaped notch; and at the outer end a small, inconspicuous tooth. Margin of front and orbits granulate. The two notches in the superior margin of the orbit are small; the one on the outer side is deep and V-shaped; outer angle of orbit not prominent. Behind it, on the antero-lateral margin, are 4 spine-pointed teeth; the first is low, the other three are of good size; all have a few denticles on their sides; the last two teeth or spines are equally prominent, the carapace having the same width at these points. Parallel to the posterior margin, a row of fine bead granules. The postero-lateral surface, over which the posterior legs fold, is naked and crossed by transverse and granulated lines. The basal segment of the antennā touches with its inner angle the bent-down angle of the front; the outer angle of the segment does not reach the end of the inner orbital angle; the flagellum stands in the orbital hiatus.

Chelipeds unequal, especially in the ♂. Exposed surface granulate and hairy like the carapace, except the lower part of the palms, which is smooth and naked. Anterior edge of arms granulate, and at the proximal extremity one very short, blunt spine. A small spine at inner angle of wrist. Palms stout, with convex lower margin. Basal half of dactylus rough and hairy. Fingers gaping, prehensile edges with a few large teeth, tips very broad and deep spoons. Ambulatory legs spinulous above.

All the specimens in alcohol are covered on the dorsal aspect with small dark color spots.

Dimensions: — ♂ type, length 5.2 mm., width 8 mm.

Distribution: —

Fakarava Id., Paumotus; outer reef; Oct. 12, 1899; 3 ♂, 3 ♀.

Makemo, Paumotus; reef; Oct. 21, 1899; 1 ♂ type, 1 ♀ (Cat. No. 32,852, U. S. N. M.).

This species has much in common with *P. pubescens* Dana,[1] but differs from it in having the carapace and chelipeds finely rough, instead of the

[1] Crust. U. S. Expl. Exped., 1852, **1**, 217; atlas, 1855, pl. 12, fig. 6 *a–d*.

carapace smooth and the chelipeds coarsely rough; in the deep median sinus of the front; in the denticulation of the lateral spines; in the lack of prominent spines on the anterior border of the arm.

The genus Pilodius stands very near Pilumnus and Chlorodopsis; it has the aspect of a Pilumnus, but the fingers are spoon-shaped instead of pointed; the carapace is not so much subdivided into areolets as in Chlorodopsis, where the antero-lateral areolets are exceptionally rough and high. As for the arrangement of antennae and orbits, it does not in Pilodius differ much from some species of Chlorodopsis, although the movable part of the antenna is excluded from the orbit in the typical species of the latter genus.

Cymo melanodactylus De Haan.

Cymo melanodactylus Alcock, 1898, **67**, 174.

Fakarava Id., Paumotus; outer reef; Oct. 12, 1899; 6 ♂, 9 ♀ (4 ovig.).
Borabora Id., Society Group; fringing reef; Nov. 7, 1899; 1 ♂, 1 juv.
Tari-Tari Id.; shore; Jan. 6, 1900; 1 ♂, 1 ♀.

Cymo quadrilobatus Miers.

Pl. 1, Fig. 7

Cymo quadrilobatus Alcock, 1898, **67**, 175.

Funafuti, Ellice Ids.; reef; Dec. 24, 1899; 1 ♂, 1 juv.
Funafuti, Ellice Ids.; shore; Dec. 25, 1899; 1 ♀ ovig.

Ozius rugulosus Stimpson.

Ozius rugulosus Stimpson, Proc. Acad. Nat. Sci. Phil., 1857, **9**, 34.

Nomuka Iki, Tonga Group; shore; Dec. 2, 1899; 2 ♂.

Ozius guttatus Milne Edwards.

Ozius guttatus Milne Edwards, Hist. Nat. Crust., 1834, **1**, 406. A. Milne Edwards, Nouv. Arch. Mus. Hist. Nat. Paris, 1873, **9**, 239, pl. 11, fig. 1.

Tongatabu; shore; Nov. 29, 1899; 1 ♂, 1 carapace.

Ozius hawaiiensis Rathbun.

Ozius hawaiiensis Rathbun, Proc. U. S. Nat. Mus., 1902, **26**, 76, text figs. 3 & 4; Bull. U. S. Fish Comm. for 1903 (1906), part 3, 862.

Nukuhiva, Marquesas Ids.; shore, seine; Sept. 15–17, 1899; 1 ♂.
Rangiroa Id.; beach; Sept. 21, 1899; 1 ♂.
Fakarava Id., Paumotus; outer reef; Oct. 12, 1899; 4 ♀.
Makemo, Paumotus; reef; Oct. 21, 1899; 5 ♂, 19 ♀.
Kusaie, Carolines; reef; Feb. 8, 1900; 5 ♂, 4 ♀.

Ozius tricarinatus, sp. nov.

Pl. 2, Fig. *3*.

Carapace $1\frac{3}{5}$ times as wide as long, very convex fore and aft, moderately convex from side to side; interregional depressions deep, surface irregularly granulate and coarsely punctate, and near the antero-lateral margins eroded. Lateral regions crossed by three blunt carinae; the posterior of these is very low and runs from the last side tooth somewhat obliquely inward toward the widest part of the mesogastric region; the next ridge is more oblique and begins at the base of the penultimate tooth; the anterior ridge begins at the next tooth and is directed toward the middle of the orbit; it is broken in two at the middle, the two parts not in the same line.

The edge of the front has a submarginal groove and is cut into four rather prominent subequal lobes, the median sinus narrower than the lateral; outer lobe separated from orbital angle by a furrow.

Antero-lateral margin blunt, cut into five teeth, the first of which is separated from the orbital margin by a broad furrow; the first two teeth or lobes are long, shallow, and subequal; the third is as long but more distinctly angled; the fourth is shorter and most dentiform and stands at the widest part of the carapace; fifth tooth much less prominent.

The type and only adult specimen is a ♀ in which the right cheliped or the one which should be the larger, as it has the stout tooth at the base of the dactyl, is abnormally reduced, being much shorter and also narrower than the left one. This last is $1\frac{1}{2}$ times as long as carapace; surface of wrist and hand reticulated, punctate, and covered with flattened granules.

Dimensions: — Length of type ♀ 37.2 mm., width 59.5 mm.

Distribution: —

Nukuhiva, Marquesas Ids.; shore, seine; Sept. 15–17, 1899; 1 ♀ (type), 1 ♀ juv. (Cat. No. 32,853, U. S. N. M.).

Papeete, Tahiti; reef; Sept. 28, 1899; 1 ♂ juv.

In the two young specimens, the granules of the surface are almost effaced, but the carapace appears more eroded, the teeth of the front are less prominent, those of the sides more prominent than in the adult. The chelipeds are very unequal, the fingers of the larger one gape narrowly.

In the shape and number of the front and side teeth this species resembles *O. verreauxii* Saussure, which, however, is flatter and has only one transverse crest.

Pilumnus andersoni de Man.

Pilumnus andersoni Rathbun, Bull. U. S. Fish Comm. for 1903 (1906), part 3, 863.

Funafuti, Ellice Ids.; reef; Dec. 24, 1899; 1 ♂, 1 ♀.

Ponape, Caroline Ids; reef; Feb. 11, 1900; 2 ♂, 3 ♀ (1 ovigerous).

The specimens from Ponape have the first of the 3 lateral spines further from the orbit than in typical *andersoni*, and the antero-lateral margin correspondingly longer. All of the 7 individuals are small, the largest measuring 7.3 mm. in width.

Pilumnus cursor A. Milne Edwards.

Pilumnus cursor Alcock, 1898, **67**, 195.

Funafuti; reef; Dec. 24, 1899; 1 immature ♀, which agrees with the description given by de Man[1] but has shorter legs than represented in the figure by A. Milne Edwards.[2] The specimen is only 4.2 mm. long, the second or longest ambulatory leg is 7.5 mm. long.

[1] Arch. f. Naturg., 1887, **53**, part 1, 299.

[2] Nouv. Arch. Mus. Hist. Nat., 1873, **9**, pl. 9, fig. 4.

Pilumnus globosus Dana.

Pilumnus globosus Dana, Proc. Acad. Nat. Sci. Phil., 1852, 81; Crust. U. S. Expl. Exped., 1852, **1**, 236; atlas, 1855, pl. 13, fig. 10. De Man, Notes Leyden Mus., 1890, **12**, 59, pl. 3, fig. 3.

Papeete, Tahiti; reef; Sept. 28, 1899; 1 adult ♀, little smaller than the type, measuring 6.2 mm. long and 8 mm. wide. It differs a little from de Man's description. The hairs of the carapace arise from rather large and irregular punctae; granules few. The margin of the front continues the arch of the antero-lateral borders, and has a wide emargination. The three lateral projections are not granules, but small spines. Palms granulate all over the outer surface, but not thickly so; fingers grooved; basal half of dactylus granulate in both chelae, and one or two granules on outer surface of immovable finger. Fingers light brown; the color line on the propodus is at right angles to its lower margin; the pollex is as broad at base as it is long.

Pilumnus tahitensis de Man.

Pilumnus tahitensis de Man, Notes Leyden Mus., 1890, **12**, 61, pl. 3, figs. 4, 4 *a*, 4 *b*.

Fakarava Id., Paumotus; outer reef; Oct. 12, 1899; 1 ♂, 2 ♀.

The largest specimen, an ovigerous ♀, is smaller than the types, measuring 6.8 mm. long by 9 mm. wide. The chelipeds are equal in all the specimens.

Actumnus integerrimus (Dana).

Pl. 1, Fig. *12;* Pl. 8, Figs. *3, 3 a, 3 b.*

Actaeodes? integerrimus Dana, Crust. U. S. Expl. Exped., 1852, **1**, 201; atlas, 1855, pl. 11. fig. 7.

Papeete, Tahiti; reef; Sept. 28, 1899; 1 ♀.

Fakarava Id., Paumotus; outer reef; Oct. 12, 1899; 1 ♀.

Carapace convex, not much broader than long, thick; side margins entire, granulate, with faint traces of one or two teeth; surface smooth to the naked eye with scarcely any trace of regions, and with a few scattered hairs; under the lens the anterior two thirds is seen to be very sparsely and finely granulous.

Front with two oblique lobes separated by a median V, outer angles

bent down, touching the basal joint of antenna. Eyes large; orbital notches obscure above, absent below outer angle.

Palatal ridge present, but not strong.

Chelipeds unequal, rough with sharp granules; lower surface of larger hand almost smooth; fingers spoon-shaped, rough at base, gaping, light-colored. In the smaller specimen (Papeete) the outer face of the hand is largely smooth. Legs almost smooth, sparsely hairy, meropodites slightly spinulous above, dactyli with long slender point.

Dimensions:—Fakarava, length 3.3, width 4.5 mm.; width of front 16 mm.

I think that this is Dana's species, as the carapace appears smooth and entire, but the hairs do not form the pattern shown in his figure.

Eriphia sebana (Shaw).

Cancer sebanus Shaw, in Shaw & Nodder, Nat. Misc., 1803, **15**, pl. 591.
Eriphia sebana Rathbun, Bull. U. S. Fish Comm. for 1903 (1906), part 3, p. 865.

Rangiroa Id.; shore; Sept. 21, 22, 1899; 2 ♂, 1 ♀; "eyes vermilion, ocellus black."

Makatea Id.; shore; Oct. 6, 1899; 1 ♀.

Fakarava, Paumotus; reef, sea beach; Oct. 13, 1899: 1 ♀ ovig.

Makemo Id., Paumotus; Oct. 20, 1899; 1 ♂.

Makemo Id., Paumotus; reef; Oct. 21, 1899; 1 ♂ juv.

Nomuka Iki, Tonga Group; shore; Dec. 2, 1899; 1 ♂, 1 ♀.

Tarawa Id., Gilbert Group; shore; Jan. 3, 1900; 1 ♀.

Kusaie, Caroline Ids.; reef; Feb. 8, 1900; 2 juv.

Manga Reva, Motus; Feb. 3, 1905; 1 ♀ ovigerous.

Eriphia scabricula Dana.

Eriphia scabricula Dana, Crust. U. S. Expl. Exped., 1852, **1**, 247; atlas, 1855, pl. 14, fig. 5*a* and *b*.

Fakarava Id., Paumotus; outer reef; Oct. 12, 1899; 1 ♀.

Trapezia[1] rufopunctata (Herbst).

Trapezia rufopunctata Alcock, 1898, **67**, 222.

Makemo, Paumotus; reef; Oct 21, 1899; 2 ♂, 2 ♂ ovig.

Funafuti, Ellice Ids.; shore; Dec. 25, 1899; 2 ♀ (1 ovig.)

[1] **Trapezia** Latreille 1825 = **Grapsillus** MacLeay, 1838. **Trapezia**, derived from τράπεζεύς, table-like, may not conflict with **Trapezium** (Humphrey, 1797), from τράπέζιον a little table.

Trapezia cymodoce (Herbst).

The variations shown in the collection from the South Pacific Islands make it necessary to unite under one specific name the many forms of the *cymodoce ferruginea* group. (*Cf.* Alcock, **67**, pp. 219–222.)

Trapezia cymodoce dentata (MacLeay).

Trapezia ferruginea dentata Ortmann, Zool. Jahrb., Syst., 1897, **10**, 204.

Rangiroa, Paumotus; beach; Sept. 21, 1899; 1 ♂.

Fakarava, Paumotus; outer reef; Oct. 12, 1899; 1 ♂.

Makemo, Paumotus; reef; Oct. 21, 1899; 4 ♂, 6 ♀ (5 ovig.).

Borabora, Society Group; fringing reef; Nov. 17, 1899; 1 ♀ ovig.

Funafuti, shore; Dec. 25, 1899; 1 ♀, ovig.

These are but slightly removed from *T. cymodoce*; they lack the acute upper border on the palm, and the hairy coating on the outer face of the palm.

Funafuti; reef; Dec. 24, 1899; 5 ♂, 8 ♀ (4 ovig.), 3 juv.; varying toward *T. cymodoce*. The outer face of the chelipeds is densely covered with downy hair, but the upper edge of the palms is obtuse, and the teeth of the front are not deeply separated.

Trapezia cymodoce ferruginea Latreille.

Trapezia ferruginea Alcock, 1898, **67**, 220.

Rangiroa, Paumotus; beach; Sept. 21, 1899; 2 ♀ ovig.

Fakarava, Paumotus; outer reef; Oct. 12, 1899; 1 ♀ ovig.

Makemo, Paumotus; reef; Oct. 21, 1899; 2 ♂, 1 ♀ ovig.

Funafuti, Ellice Id.; reef; Dec. 24, 1899; 1 ♂.

Funafuti; shore; Dec. 25, 1889; 2 ♀ (1 ovig.). Variety with palms hairy outside, but not acute above.

Rangiroa Id.; Mohican reef; Sept. 23, 1899; 1 ♂; and

Easter Island; shore; Dec, 20, 1904; 1 ♂, 1 ♀ ovig. Variety with chelipeds covered with fine spots.

Rangiroa Id.; Mohican reef; Sept. 23, 1899; 1 ♂, 1 ♀ ovig., holding in the right claw a young anemone. Variety with dark band across the front, palms reticulated and legs spotted. This is the *guttata* form of Alcock, **67**, p. 220.

The following specimens are similar to the last, but the spots on the legs are absent, perhaps obliterated from long preservation:

Fakarava, Paumotus; shoal in lagoon; Oct. 11, 1899; 1 ♂, 1 ♀ ovigerous.

Borabora Id., Society Group; fringing reef; Nov. 17, 1899; 1 ♂.

Trapezia cymodoce areolata Dana.

Trapezia ferruginea var. **areolata** Alcock, 1898, **67**, 221.

Vavau; reef; Dec. 5, 1899; 1 ♂, 1 ♀ ovig.

Funafuti; reef; Dec. 24, 1899; 3 ♂, 2 ♀ (1 ovig.).

Trapezia cymodoce maculata (MacLeay).

Trapezia maculata Alcock, 1898, **67**, 221.

Makemo, Paumotus; reef; Oct. 21, 1899; 1 ♀ immature; spots few.

Variety: — At the same locality, an immature ♀ agreeing entirely in form with the above, but with quite different markings; the carapace and chelipeds are covered with reticulating brown (in alcohol) lines, legs dotted with minute spots of brown.

Of the form *maculata*, it may be said that it usually has the prominent front, the sharp side-tooth, the carpal spine, and the brilliant spots on carapace, chelipeds, and legs; but these characters run into those of the *intermedia* form, which has a less prominent front, blunt side-tooth, blunt-angled wrist, reticulated palms, while carapace and legs are spotted.

Trapezia digitalis speciosa Dana.

Trapezia speciosa Dana, Crust. U. S. Expl. Exped., 1852, **1**, 253; atlas, 1855, pl. 15, fig. 1.

Papeete, Tahiti; reef; Sept. 28, 1899; 1 ♂, 1 ♀ ovig.

Fakarava, Paumotus; outer reef; 10 ♂, 10 ♀ (9 ovig.).

Makemo, Paumotus; reef; Oct. 21, 1899; 1 ♂, 1 ♀.

Trapezia digitalis bella Dana.

Trapezia bella Dana, Crust. U. S. Expl. Exped., 1852, **1**, 254; atlas, 1855. pl. 15, fig 2.

Papeete, Tahiti; reef; Sept. 28, 1899; 1 ♂.

Tetralia glaberrima (Herbst).

Tetralia glaberrima Alcock, 1898, **67**, 223.

Papeete, Tahiti; reef; Sept. 28, 1899; 1 ♂, 2 ♀ ovig.
Fakarava, Paumotus; outer reef; Oct. 12, 1899; 4 ♂, 7 ♀ (3 ovig.).
Makemo, Paumotus; reef; Oct. 21, 1899; 1 ♂, 6 ♀ ovig.

Domecia hispida Eydoux and Souleyet.

Domecia hispida Alcock, 1898, **67**, 230.

Makemo, Paumotus; reef; Oct. 21, 1899; 1 ♂, 3 ♀ (1 ovig.).
Funafuti, Ellice Is.; reef; Dec. 24, 1899; 1 ♂, 2 ♀ (1 ovig.).

Lybia caestifera (Alcock).

Melia caestifer Alcock, 1898, **67**, 231. Illus. Zool. Investigator, Crust., 1899, part 7, pl. 38, fig. 4.

Papeete, Tahiti; reef; Sept. 28, 1899; 1 ♂.

PORTUNIDAE.

Caphyra rotundifrons (A. Milne Edwards).

Pl. 1, Fig. *4*.

Camptonyx rotundifrons A. Milne Edwards, Nouv. Arch. Mus. Hist. Nat. Paris, 1869, **5**, 156, pl. 7, figs. 11, 12.

Papeete, Tahiti; reef; Sept. 28, 1899; 1 ♀ ovig.

Catoptrus nitidus A. Milne Edwards.

Catoptrus nitidus Alcock, 1900, **69**, 387.

Makemo, Paumotus; reef; Oct. 21, 1899; 1 ♀.
Funafuti, Ellice Ids.; reef; Dec. 24, 1899; 1 ♂.

Portunus (Achelous) granulatus (Milne Edwards).

Neptunus (Achelous) granulatus Alcock, 1899, **68**, 45.

Fakarava Id.; Paumotus; outer reef; Oct. 12, 1899; 1 ♂.
Borabora, Society Ids.; shore and fringing reef; Nov. 17, 1899; 1 ♂, 1 ♀.
Funafuti, Ellice Ids.; shore, seine; Dec. 24, 1899; 2 ♂, 1 ♀.
Butaritari, Gilbert Group; lagoon, surface; Jan. 6, 1900; 1 juv.
Mela, Carolines; shore, seine; Feb. 16, 1900, 3 ♀ (1 ovig.).

Callinectes alexandri, sp. nov.

Pl. 2, Fig. *1*; Pl. 9, Figs. *3*, *3a*, *3b*.

Young male. Extreme width of carapace about $2\frac{2}{5}\times$ the median length. Regions well marked, as well as the two areolae at the inner angle of the branchial region. Granules of dorsal surface squamiform and conspicuous; most scattered on the anterior third, finest and most crowded on the posterior third. The granules of the customary ridges (two gastric and one branchial) are more beadlike. The median length of the intramedial region, or that part of the gastric region situated behind the second ridge, is nearly $\frac{1}{2}$ its anterior width.

Frontal teeth four, besides the orbital pair. Median pair tuberculiform, not more than $\frac{1}{3}$ the area of the triangular, obtuse, outer pair. Inner orbital tooth lobiform and a little less advanced than the median teeth. Superior fissures of orbit well marked, but closed; inner suborbital lobe subacute, not very prominent.

The outer orbital tooth, or the first tooth of the lateral series, is equilateral or subacute. Teeth 2 to 7 inclusive are saw-teeth, that is, shorter on the anterior than on the posterior margin; the second, third, and fourth are acute, the fourth, fifth, and sixth are acuminate and slightly concave on the posterior margin. Eighth tooth curved forward, acuminate. The midrib of the ninth projection, or the lateral spine, is quite transverse; its length is about $\frac{1}{5}$ of the carapace, exclusive of the lateral spines.

The shape of the abdomen of the young male is probably not that of the adult; the sixth segment tapers gradually to the distal end, the seventh is equilateral.

Chelipeds very finely rugose, the costae of wrist and hand prominent and more closely granulate; three strong curved spines on the anterior margin of the merus; posterior margin unarmed. The outer spine of the carpus is well developed, though much smaller than the inner. Of the two spines of the palm, the proximal is curved, the distal is very slender.

Dimensions: — Length of ♂, type, 14.8 mm.; entire width, 35.7 mm.; length of lateral spine, 5 mm.

Distribution: —

Papeete, Tahiti; shore; Nov. 9, 1899; 1 ♂, juv., type (Cat. No. 32,854, U. S. N. M.).

Suva, Fijis; shore; Dec. 13, 1899; 1 ♀, juv.

Thalamonyx parvidens, sp. nov.

Pl. 5, Fig. *9*.

Carapace not $\frac{2}{3}$ as long as broad; surface minutely granulate and covered with fine hairs easily rubbed off. Besides the three gastric ridges, the last of which is continued to the posterior lateral tooth, there is a short ridge on each branchial region.

Front prominent, convex, a well-marked median V.

Antero-lateral borders little oblique; of the five teeth, the last two are smaller than the others, the fourth being the shortest, the fifth spiniform.

Diameter of orbit about $\frac{1}{3}$ the inter-orbital space.

Chelipeds granulate, especially the arm and wrist. Arm rugose-denticulate above; inner border with three graduated teeth and numerous denticles. Wrist costate, three of the costae terminating in low, blunt projections; a strong spine at inner angle. Chelae very unequal; two costae on upper surface, the inner one with a spine at its middle, outer one ending in a tubercle not far from the middle in the ♂; in a sharp spine in the ♀, and occasionally in the ♂; spine near wrist usually blunt in the ♂, sharp in the ♀.

Merus of last pair of legs $2\frac{1}{2}\times$ as long as broad.

Sixth segment of ♂ abdomen $\frac{2}{3}$ as long as broad.

Dimensions: — Length of type ♂, 15.2 mm.; width, 18.7 mm.

Distribution: —

Truk, Carolines; shore, in seine; Feb. 16, 1900; 12 ♂, 8 ♀ (1 ovig.). 1 ♂ is type (Cat. No. 32,855, U. S. N. M.).

Mela, Carolines; shore, in seine; Feb. 16, 1900; 9 ♂, 8 ♀ (3 ovig.). One of the latter is only 10.3 mm. in width.

This species differs from *T. danae* (A. Milne Edwards)[1] and *T. graeilipes* A. Milne Edwards[2] in the wider carapace, unequal side-teeth, and smoother chelipeds, and from *T. graeilipes* in the smaller orbit.

Thalamita crenata Rüppell.

Thalamita crenata, Alcock, 1899, **68**, 76.

Borabora, Society Ids.; shore and fringing reef; Nov. 17, 1899; 2 ♂, 5 ♀ (2 ovig.).

[1] Nouv. Arch. Mus. Hist. Nat. Paris, 1869, **5**, 153, pl. 7, figs. 6, 7.
[2] Nouv. Arch. Mus. Hist. Nat. Paris, 1873, **9**, 169, pl. 4, fig. 3.

Thalamita coeruleipes Jacquinot.

Thalamita coeruleipes Jacquinot, in Jacquinot & Lucas, Voyage au Pole Sud, Zool., **3**, Crust., 1853, 53; atlas, 1852 (?), pl. 5, fig. 6.

Fakarava Id., Paumotus; reef; Oct. 12, 1899; 1 ♂; also Society Ids., A. Garrett coll. (U. S. N. M.).

This species is very near *T. prymna* (Herbst), but the fourth lateral tooth is not much smaller than the other teeth.

Thalamita admete Herbst.

Cancer admete Herbst, Natur. d. Krabben u. Krebse, 1803, **3**, part 3, 40, pl. 57, fig. 1.
Thalamita admeta Alcock, 1899, **68**, 82 (part). Borradaile, Fauna, Maldive Arch., 1902, **1**, 202 (var. A.).
Thalamita admete Rathbun, Bull. U. S. Fish Comm. for 1903 (1906), part 3, 874.

Fakarava Island, Paumotus; outer reef; Oct. 12, 1899; 10 ♂, 13 ♀, 8 of which are ovigerous.

Makemo, Paumotus; reef; Oct. 21, 1899; 1 ♂, 1 ♀, 2 juv.

Tongatabu; reef and shore; Nov. 30, 1899; 1 ♂, 1 ♀.

Funafuti, Ellice Ids.; reef; Dec. 24, 1899; 1 ♀ ovig., 1 juv.

Mela, Carolines; shore, in seine; Feb. 16, 1900; 1 ♀ shedding its shell.

The fourth side tooth is smaller, more rudimentary, than in specimens recorded in 1906 (*loc. cit.*), but otherwise there are no differences, so that there is perhaps no dividing line between the form with the 4th tooth almost undiscernible and the typical form with a well-developed tooth.

Thalamita gardineri Borradaile, variety.

Thalamita gardineri Borradaile, Fauna Maldive Arch., 1902, **1**, 205, text fig. 36.

Fakarava Id., Paumotus; outer reef; Oct. 12, 1899; 1 ♂, 1 ♀ (ovig.).

Length of ♂ 12.1, width 19.5, fronto-orbital width 14.2 mm.

Differs from typical *gardineri* as follows: —

Carapace wider; length .62 of width instead of .76 of width. This additional width of carapace, although without an increase in fronto-orbital distance, gives the crab less of a *Charybdis*-like aspect.

The inner surface of the palm is almost smooth; very fine squamiform markings are visible with a lens; the longitudinal ridge through the middle is smooth in the larger cheliped, obscurely granulate in the smaller. (Chelipeds of ♂ wanting.)

Thalamitoides quadridens A. Milne Edwards.

Thalamita (Thalamitoïdes) quadridens A. Milne Edwards, Nouv. Arch. Mus. Hist. Nat., 1869, **5**, 147, pl. 6, figs. 8–15.

Thalamitoides quadridens de Man, Arch. f. Naturg., 1887, **53**, 1, p. 332.

Jaluit; lagoon; Jan. 1, 1900; 1 ♀ ovigerous, 14.5 mm. in width.

Carupa laeviuscula Heller.

Carupa laeviuscula Heller, Verh. zool. bot. Ges. Wien, 1862, **12**, 520; Reise Novara, Crust., 1865, **27**, pl. 3, fig. 2; Alcock, 1899, **68**, 26.

Makemo, Paumotus; reef; Oct. 21, 1899; 1 ♂.

INACHIDAE.

Menaethius monoceros (Latreille).

Menaethius monoceros Alcock, 1895, **64**, 197.

Fakarava Id., Paumotus; outer reef; Oct. 12, 1899; 2 ♀.
Funafuti, Ellice Id.; reef; Dec. 24, 1899; 1 ♀.
Tari-Tari Id.; shore, reef; Jan. 6, 1900; 1 ♂.
Truk, Carolines; shore, seine; Feb. 16, 1900; 2 ♂, 1 ♀.
Mela, Carolines; shore, seine; Feb. 16, 1900; 2 ♂.

Halimus borradailei, nom. nov.

Hyastenus elegans var. **tenuicornis** Borradaile, Proc. Zool. Soc. London, 1900, 574, pl. 40, fig. 2. Not **Hyastenus (Chorilia) tenuicornis** Pocock, Ann. Mag. Nat. Hist., 1890, (6) **5**, 76.

The form described by Borradaile as a variety of *H. elegans* Miers,[1] it seems to me should be regarded as a distinct species, because of the different build of the postocular lobes, the great width between the horns at their base, as well as the different ornamentation of the dorsum.

On the reef at Funafuti, Dec. 24, 1899, was taken an immature ♀ about $\frac{1}{3}$ the size of Borradaile's examples from Rotuma. Of the six gastric tubercles in his figure, only the outer pair are evident in our individual. In other respects it agrees well enough with the figure, allowing for the difference in size.

[1] "Challenger" Rept., 1886, **17**, 58, pl. 6, fig. 3.

Perinea tumida Dana.

Perinea tumida Dana, Crust. U. S. Expl. Exped., 1852, **1**, 114; atlas, 1855, pl. 4, fig. 1 *a–f*.

Fakarava Id., Paumotus; outer reef; Oct. 12, 1899; 2 ♀ gravid.

Schizophrys aspera (Milne Edwards).

Schizophrys aspera Alcock, 1895, **64**, 243.

Funafuti, Ellice Ids.; shore; Dec. 25, 1899; 1 ♀ juv.

Lophomicippa, gen. nov.

(λόφος, crest, in allusion to the legs; **Micippa**, a generic name.)

Carapace suboblong, high, rounded behind; front broad, almost vertically deflexed. Eye-stalks long, corneae large, oval, chiefly ventral in position; eyes filling the orbits, the margins of which are for the most part entire, the broad basal joint of the antenna bidentate. Antennae exposed, 2nd and 3rd joints small.

Buccal cavity widened anteriorly. Merus of outer maxillipeds broader than the ischium, its external angle expanded, and its internal angle notched for the insertion of the palpus.

Chelipeds of adult ♀ slender, feeble, shorter than the carapace. Legs diminishing rapidly in length, the merus joints broadly expanded, forming together a deep, continuous border around and below the sides of the carapace and concealing the chelipeds.

This genus unites the most striking characters of Micippa Leach[1] of the Indo-Pacific, and Hemus A. Milne Edwards[2] of tropical America.

It has the carapace of the former and the legs of the latter. The orbits of Micippa are more tubular, while the carapace of Hemus is strongly narrowed in front and the second and third joints of the antennae are very large.

Type, and only species,

Lophomicippa limbata, sp. nov.

Pl. 5, Fig. *3*; Pl. 6, Figs. *1–1g*.

Surface pubescent.

Carapace as wide as its superior length, narrowing a little anteriorly,

[1] Zool. Misc., 1817, **3**, 15.

[2] Miss. Sci. Mexique, Crust., 1875, 88.

surface uneven, highest along the median line, hepatic region depressed, its margin crenulate. A small spine at the postero-lateral angle, behind it a spinule or granule; posterior margin bearing three lobes, the middle one with four granules on its border, the lateral lobes smooth, naked, and rounded, projecting downward between the bases of the last two legs.

Front steeply inclined, its lower margin convex in front view, concave in ventral view, and fringed with long hair; at either end of this margin there is a small sharp forward-pointing spine; side margins spinulous or granulous.

Basal joint of antenna large, smooth, with the exception of a crenulated crest near and parallel to its union with the carapace; this crest ends outwardly in a small tooth followed by a second tooth on the margin of the orbit. Peduncle of antenna not reaching lower margin of front, fringed with long hair, second joint expanded, third joint short, cylindrical.

Chelipeds smooth, shining; in the ♀ the chelae taper distally. In the legs of the first pair the merus is longer than the sum of the next three joints, its outer surface is concave, and it bears a small spine at the lower distal angle. Carpus short, broad, propodus elongate, dactylus half as long and strongly curved. Size of the merus diminishing from the first to the fourth leg, that of the fourth being about half as long and $\frac{2}{3}$ as wide as that of the first leg, and a little shorter than the sum of the next three joints.

Abdomen of ♀ thin, flat, 7-jointed.

Dimensions: — ♀, length, from lower edge of front, 9.2 mm.; greatest width, 8 mm.; width at postorbital angles, 5.5 mm.

Type locality: — Makemo, Paumotus; reef; Oct. 21, 1899; 1 ♀ ovigerous (Cat. No. 32,856, U. S. N. M.).

PARTHENOPIDAE.

Parthenope (Parthenope) melana, sp. nov.

Pl. 5, Fig. *6;* Pl. 6, Fig. *2.*

Carapace ovate-pentagonal, little broader than long. A continuous longitudinal elevation on the gastric and cardiac regions; an oblique elevation on the branchial region. A deep hollow at the inner angle of the branchial region; a furrow either side of the hepatic region. The more elevated portions are covered with berried tubercles; depressions for the most part smooth.

Front inclined at an angle of about 45°; edge quinquedentate; either side of the blunt median tooth, there is a small tooth, and behind it a broad shallow tooth. Constriction behind the orbits not sufficient, I think, to place the species in the subgenus Rhinolambrus.

Hepatic region well marked.

Antero-lateral margin of branchial region armed with six tubercles, this line being partially extended backward and upward on the postero-lateral margin by three tubercles, the last of which is the largest tubercle of the carapace. Posterior margin with two lines of tubercles, the terminal tubercle of the submarginal row being the largest.

Chelipeds about $2\frac{1}{3}$ times as long as the carapace. Arm and hand margined with irregular teeth and tubercles which are granulated or berried. Upper surface of arm with a row of tubercles; upper and inner surfaces of hand almost smooth. Outer surface of arm, wrist, and hand and inner surface of arm tuberculous.

The slender ambulatory legs have the dactyli longer than the propodi.

Dimensions: — Length of ♀ 20 mm., width 21.3 mm.

Type locality: — Mela, Carolines; shore, seine; Feb. 16, 1900; 1 ♀ (Cat. No. 32,857, U. S. N. M.).

This species is very near *P. lippa* (Lanchester)[1] from the Malay Peninsula, but differs in the shorter propodal joints of the ambulatory legs, the shorter front, the small size of the postero-lateral protuberance, the presence of an oblique line of branchial tubercles.

CALAPPIDAE.

Calappa hepatica (Linnaeus).

Calappa hepatica Alcock, 1896, **65**, 142.

Borabora, Society Islands; shore and fringing reef; Nov. 17, 1899; 1 ♂, 1 ♀.

Lifu; shore; Dec. 13, 1899; 3 ♂.

Tari-Tari Island; shore; Jan. 6, 1900; 1 ♂.

[1] Proc. Zool. Soc. London, 1901, part 2, 537, Pl. 33, fig. 1.

Matuta banksii Leach.

Matuta banksii Alcock, 1896, **65**, 158, description, not **M. picta** Hess.

Nukuhiva, Marquesas Ids.; shore and seine; Sept. 15, 17, 1899; 2 ♂, 5 ♀, 2 juv.

LEUCOSIIDAE.

Nucia gelida, sp. nov.

Pl. 5, Fig, *4;* Pl. 9, Figs. *2–2 c.*

Entire surface frosted with granules.

Carapace broader than long, roughly hexagonal with the pterygostomian regions protuberant; covered with tubercles, which toward the front and sides become gradually elongated, forming blunt conical spines. Longest spines at lateral angle, and at pterygostomian angle.

Front formed by two teeth separated by a furrow, and bearing each a tubercle on the margin.

Orbit not concealing the eye, armed with a supraorbital and a sharp post-orbital spine. A spine at the angle of the buccal cavity, and four below the orbit. Two tubercles on the exognath of the outer maxilliped.

Chelipeds of ♀ equal, merus having a few conical spines disposed in a row along the outer margin and in a transverse series on the distal half of the upper surface. Wrist and hand with a few tubercles above; fingers with longitudinal lines of granulations.

The merus and carpus joints of the legs have each two protuberances on the upper margin; dactyli elongate, regularly tapering, horny tips transparent.

♀, Length 2.5 mm., width 3.5 mm.

Type locality:— Fakarava Id., Paumotus; outer reef; Oct. 12, 1899; 1 ♀ ovigerous. (Cat. No. 32,858, U. S. N. M.)

Leucosides whitmeei (Miers).

Leucosia whitmeei Alcock, 1896, **65**, 224.

Mela, Carolines; shore, seine; Feb. 16, 1900; 1 ♂.

PANAMIC REGION.

OCYPODIDAE.

Ocypode gaudichaudii Milne Edwards and Lucas.

Ocypode gaudichaudii Milne Edwards and Lucas, D'Orbigny's Voy. l'Amér. Mérid., 1843, **6**, part 1, 26; 1857, **9**, pl. 11, fig. 4.

Chatham Id., Galapagos; shore; Jan. 8, 1905; 2 ♀.

GRAPSIDAE.

Grapsus grapsus (Linnaeus).

Grapsus grapsus Rathbun, Bull. U. S. Fish Comm. for 1900 (1901), **2**, 16, and synonymy.

Chatham Island, Galapagos Ids.; shore; Jan. 4, 1905; 1 ♂, 3 ♀.

Planes minutus (Linnaeus).

Nautilograpsus minutus Kingsley, Proc. Acad. Nat. Sci. Phil., 1880, 202.

South of Gulf of California; station 4587, surface; Oct. 12, 1904; 1 ♀.
Off Guatemala; station 4605, surface; Oct. 17, 1904; 1 ♂.
Off Peru; station 4649, surface; Nov. 10, 1904; 2 ♀.

PILUMNIDAE.

Micropanope taboguillensis, sp. nov.

Pl. 1, Fig. *8*; Pl. 7, Figs. *3*, *3a*.

Carapace subhexagonal, of moderate width, about $1\frac{1}{3}$ × as broad as long; anterior half inclined downward; posterior half flat; in front of cardiac region the regions are distinct, the protogastric areas anteriorly subdivided longitudinally. Surface rough with granulated rugae on anterior two thirds, posteriorly nearly smooth. Front narrow, less than $\frac{1}{3}$ the width of the carapace, prominent, divided by a large V-shaped notch into 2 lobes with oblique and slightly concave margins. Edge of front, orbits, and antero-lateral margins finely granulate. Outer angle of orbit not prominent nor dentiform. Tooth E of Dana small and distant from the orbit, the intervening space straight. Teeth N, T, & S of good size, subequal, acute, N somewhat curved. A small subhepatic clump of granules.

Outer sinus of orbit V-shaped; tooth at inner angle thickened.

Chelipeds strong, unequal, rough with sharp granules which are very large on the wrist and hand.

Inner angle of wrist blunt, not produced; below it a sharp tooth; a deep sulcus parallel to distal margin. On the upper surface of the hand are two deep sulci; on the lower surface the granules are smaller and more depressed; inner surface with a coarsely granulated area, reaching from the middle to the upper margin. Fingers deeply sulcate, dactylus granulate on basal portion in large cheliped, and on basal half in small cheliped. Fingers not gaping in small cheliped, slightly gaping in large one; large dactyl with a strong basal tooth.

Legs spinulous. The merus has a single row of spinules on anterior margin, the carpus and propodus each three rows, but on these joints the spinules are obscured by hairs; upper surface of merus almost smooth, of next two joints more or less rough with sharp granules.

Dimensions: — ♂ type, length 7 mm., width 10 mm.; fronto-orbital width 5.7 mm., frontal width 3 mm.

Type locality: — This species inhabits Taboguilla Id., Panama. The type, a ♂, was taken at low tide at a depth of one fathom, from coral, Oct. 31, 1904 (Cat. No. 32,859, U. S. N. M.). A much smaller ♂ was taken between tide marks, Oct. 31, 1899.

The nearest species is *M. truncatifrons* Rathbun[1] from deep water in the Caribbean region, which has a horizontal front, the carapace with fewer horizontal markings and rougher behind, the inner prominences of the wrist spiniform, the legs much more slender.

Xanthodius sternberghii Stimpson.

Xanthodius sternberghii Stimpson, Ann. Lyc. Nat. Hist. N. Y., 1859, **7**, 52.

Taboguilla Id.; between tide marks; Oct. 31, 1899; 5 ♂, 7 ♀.

Perico Id., Panama; Oct. 26, 1904; 1 ♂.

Cycloxanthops vittatus (Stimpson).

Xantho vittata Stimpson, Ann. Lyc. Nat. Hist. N. Y., 1860, **7**, 206.

Cycloxanthus vittatus A. Milne Edwards, Miss. Sci. au Mexique, Zool., 1879, pt. 5, **1**, 259, pl. 46, fig. 5.

Perico Id., Panama, Oct. 26, 1904; 1 ♂.

[1] Bull. Lab. Nat. Hist. State Univ. Iowa, 1898, **4**, 274.

Actaea dovii Stimpson.

Actea dovii Stimpson, Ann. Lyc. Nat. Hist. N. Y., 1871, **10**, 104.

Perico Id., Panama; Oct. 26, 1904; 2 ♀.

Ozius verreauxii Saussure.

Ozius verreauxii Saussure, Rev. Mag. Zool., 1853, (2), **5**, 359, pl. 12, fig. 1. A. Milne Edwards, Miss. Sci. au Mexique, Zool., 1880, part 5, **1**, 277, pl. 55, fig. 4.

Taboguilla Id.; between tide marks; Oct. 31, 1904; 1 ♀.

Ozius agassizii A. Milne Edwards.

Ozius agassizii A. Milne Edwards, Miss. Sci. au Mexique, Zool., 1880, part 5, **1**, p 279, pl. 55, fig. 1.

Taboguilla Island; between tide marks; Oct 31, 1899; 4 ♂, 6 ♀, 10 juv.
Perico Id., Panama; Oct. 26, 1904; 1 ♂, 1 juv.

Heteractaea lunata (Milne Edwards and Lucas).

Heteractaea lunata A. Milne Edwards, Miss. Sci. au Mexique, Zool., 1880, part 5, **1**, 301, pl. 52, fig. 2.

Taboguilla Id.; between tide-marks; Oct. 31, 1899; 1 ♂, 1 ♀.
Taboguilla Id.; from coral, 1 fath., low tide; Oct. 31, 1904; 4 ♂, 2 ♀, 1 juv.

Eriphia squamata Stimpson.

Eriphia squamata Stimpson, Ann. Lyc. Nat. Hist. N. Y., 1859, **7**, 56; 1860, **7**, 217.

Taboguilla Id.; between tide-marks; Oct. 31, 1899; 2 ♀.

PORTUNIDAE.

Portunus (Achelous) affinis (Faxon).

Achelous affinis Faxon, Bull. Mus. Comp. Zoöl., 1893, **24**, 155; Mem. Mus. Comp. Zoöl., 1895, **18**, 23, pl. 4, figs. 1, 1 *a*, 1 *b*.

Off Acapulco, lat. 17° 20′ N., long. 101° 32′ W., surface, from turtle, station 4594, Oct. 14, 1904; 11 specimens apparently half digested.

Euphylax dovii Stimpson.

Euphylax dovii Stimpson, Ann. Lyc. Nat. Hist. N. Y., 1860, **7**, 226, pl. 5, fig. 5.
Euphylax dovii A. Milne Edwards, Miss. Sci. au Mexique, 1879, 204, pl. 38, fig. 2.

Off Gulf of Panama, lat. 7° 15′ N., long. 82° 8′ W., surface, station 4619, Oct. 20. 1904; 1 ♀.

INACHIDAE.

Acanthonyx petiverii Milne Edwards.

Acanthonyx petiverii Milne Edwards, Hist. Nat. Crust., 1834, **1**, 343.
Acanthonyx Petiveri A. Milne Edwards, Miss. Sci. au Mexique, Zool., 1878, part 5, **1**, 143, pl. 27, fig. 7, and synonymy.

Perico Id., Panama; Oct. 26, 1904; 1 ♂.

Pelia pacifica A. Milne Edwards.

Pelia pacifica A. Milne Edwards, Miss. Sci. au Mexique, Zool., 1875, **1**, part 5, 73, pl. 16, fig. 3. Not **Pelia pacifica** Rathbun, Proc. U. S. Nat. Mus., 1893, **16**, 90.

Perico Id., Panama; Oct. 26, 1904; 1 ♂, 2 ♀.

An examination of the specimens from the same locality as the type (Bay of Panama) leads me to believe that the specimens that I have hitherto assigned to *P. pacifica* are a distinct species. The specimens from Perico Island are very short and broad (♂, length 8.5, width 6.4 mm.) and have very short horns, and in the ♂ the palms much enlarged and fingers gaping at base.

The other form, which extends from Santa Catalina Id., Cal., probably to Magdalena Bay, L. Cal., is longer and narrower (♂, Southern Calif. length 13.4 mm., width 8.5 mm.), the horns longer, and the palms of the ♂ only slightly enlarged, tapering distally, fingers not gaping. I venture to give a new name to this form — *P. clausa* — the type being a ♂ from a lot collected in Southern California by Dr. W. H. Dall (Cat. No. 16203, U. S. N. M.)

One specimen, a ♂, from off Magdalena Bay, L. C., station 2989, "Albatross," which in 1893 (*loc. cit.*) I called *Pelia*, sp., is very puzzling. It has the claws of typical *pacifica*, but the carapace is not so wide; but this may be due to its greater size (8.6 mm. wide by 12.6 mm. long). On the whole I think that it may be referred to the true *pacifica*, but more material is necessary to determine this point.

Scyramathia cornuta (Rathbun).

Anamathia cornuta Rathbun, Proc. U. S. Nat. Mus., 1898, **21**, 571, pl. 41, fig. 2.

Ten miles from Hood Id., Galapagos; 633 fath., station 4641; Nov. 7, 1904; 1 ♂.

Scyramathia vesicularis, sp. nov.

Pl. 5, Fig. 7; Pl. 8, Figs. 1, 1*a*.

Body and legs everywhere covered with a pubescence formed of spherical vesicles; a few long, slender hairs on the gastric region, the lateral margins, and the rostrum. Carapace armed with eighteen short, stout, and pointed spines, of which four are on the gastric region, one is on the cardiac, one on the intestinal region, four on each branchial region, one on each hepatic region, and one above each eye; in addition, the post-ocular lobe is narrow, curved, and acute.

Rostrum composed of two slender divergent horns $\frac{2}{5}$ the length of the rest of the carapace.

Eyes visible even when retracted against the post-ocular lobe.

The narrow basal antennal joint has an antero-external spine, and two spines further back on the outer margin; flagella situated outside the rostrum.

Ischium and merus of outer maxillipeds with a concave surface.

Chelipeds (of ♂) just as long as the carapace and rostrum and little stouter than the other legs; arm with four short spines above, which increase distally; wrist with three or four similar spines; palm with sides parallel, $1\frac{1}{2}$ × as long as the fingers, which meet when closed.

Merus of all the ambulatory legs with a spine or tooth at the distal end. 1st pair $1\frac{1}{2}$ × as long as carapace and rostrum.

In the ♀ the rostrum is shorter, $\frac{1}{3}$ length of remainder of carapace; the cheliped = length of carapace and half the rostrum; the fingers are relatively longer than in the ♂; 1st pair of ambulatories $1\frac{1}{5}$ × as long as carapace and rostrum.

Dimensions. — ♂ type, length 20.7 mm., width 11.5 mm., rostrum 6 mm.

Type locality. — S. E. of Hood Id., Galapagos, 300 fath., station 4642; Nov. 7, 1904; 1 ♂ (type) 3 ♀ (2 gravid) Cat. No. 32,860, U. S. N. M.

This species in its numerous spines resembles *S. pulchra* (Miers),[1] from the Philippines and Andaman Sea, 130 to 561 fathoms, but differs from it in the arrangement of the spines and the shorter legs.

[1] "Challenger" Brachyura, 1886, **17**, 26, pl. 4, fig. 1.

Mithrax bellii Gerstaecker.

Mithrax ursus Bell, Proc. Zool. Soc. London, 1835, **3**, 171, pub. Feb. 24, 1836; Trans. Zool. Soc. London, 1836, **2**, 52, pl. 10, figs. 2 and 3. A. Milne Edwards, Miss. Sci. au Mexique, 1875, part 5, **1**, 103. Not **Cancer ursus** Herbst.
Mithrax bellii Gerstaecker, Arch. f. Natur., 1856, **22**, part 1, 112.
Mithrax bellii Rathbun, Proc. Wash. Acad. Sci., 1902, **4**, 284.

Chatham Id., Galapagos; shore; Jan. 8, 1905; 1 ♀ juv.

The young of this species, as Bell has shown, presents such a different aspect from the adult that it might easily be mistaken for another species. Length of young ♀, Chatham Id., 21.7, width 20.7 mm. The body and legs, except the chelae, are everywhere covered with a furry hair. The protuberances are all sharp-pointed. The rostral horns curve toward each other; the pair of spines at the base of the horns are nearly as long as the horns and diverge from each other; the next pair is very small. In the adult (♂ from Black Bight) the carapace is wider than long (63.6 mm. long × 65.4 mm. wide), the surface is almost wholly naked, and the protuberances are very stout, blunt tubercles.

Mithrax denticulatus Bell.

Mithrax denticulatus Bell, Trans. Zool. Soc. London, 1836, **2**, 54, pl. 11, fig. 2.

Perico Id., Panama; Oct. 26, 1904; 1 ♂, 2 ♀.

Thoe erosa Bell.

Thoe erosa Bell, Proc. Zool. Soc. London, 1835, **3**, 171, pub. Feb. 24, 1836; Trans. Zool. Soc. London, 1836, **2**, 48, pl. 9, fig. 4. A. Milne Edwards, Miss. Sci. au Mexique, 1875, part 5, **1**, pl. 19, fig. 4; 1878, p. 121.

Taboguilla Id.; between tide-marks; Oct, 31, 1899; 1 ♂.
Perico Id., Panama; Oct. 26, 1904; 1 ♂.

CALAPPIDAE.

Calappa convexa Saussure.

Calappa convexa Saussure, Rev. Mag. Zool., 1853, (2), **5**, 362, pl. 13, fig. 3.

Taboguilla Id.; shore; Oct. 28, 1904; 1 ♂.

EXPLANATION OF PLATES.

PLATE 1.

Plate 1.

Fig. 1. *Pilodius paumotensis*, ♂, type, × 2½.
Fig. 2. *Actaea cavipes*, ♂, Borabora, × 2½.
Fig. 3. *Chlorodopsis scabricula*, ♀, Papeete, × 4.
Fig. 4. *Caphyra rotundifrons*, ♀, Papeete, × 2½.
Fig. 5. *Chlorodopsis venusta*, ♂, type, × 2½.
Fig. 6. *Platypodia digitalis*, ♀, type, × 2½.
Fig. 7. *Cymo quadrilobatus*, ♀, Funafuti, × 1½.
Fig. 8. *Micropanope taboguillensis*, ♂, type, × 2½.
Fig. 9. *Actaea remota*, ♂, type, × 4.
Fig. 10. *Cyclodius gracilis*, ♀, Funafuti, × 4.
Fig. 11. *Leptodius efferens*, ♂, type, × 4.
Fig. 12. *Actumnus integerrimus*, ♀, Fakarava, × 4.

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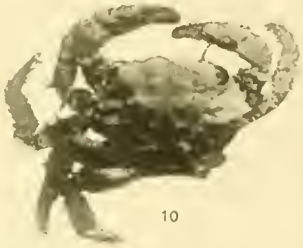

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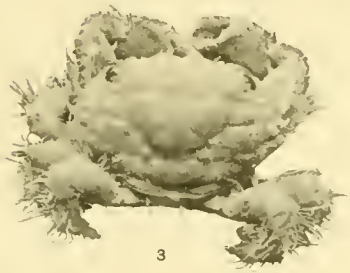

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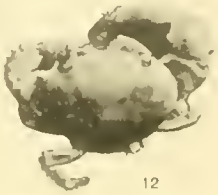

12

HELIOTYPE CO., BOSTON

PLATE 2.

Plate 2.

Fig. 1. *Callinectes alexandri*, ♀, type, × 1½.
Fig. 2. *Hemigrapsus elongatus*, ♂, Tongatabu, × 2½.
Fig. 3. *Ozius tricarinatus*, ♀, type, nat. size.
Fig. 4. *Ptychognathus easterana*, ♂, type, × 2½.
Fig. 5. *Chlorodopsis spinipes*, ♂, Borabora, × 2½.

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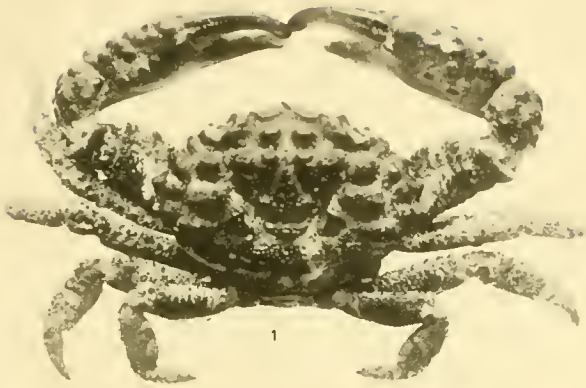
HELIOTYPE CO., BOSTON

PLATE 3.

Fig. 1. *Phymodius ungulatus*, ♂, Borabora, × 1½.
Fig. 1*a*. Same, under side.
Fig. 2. *Phymodius ungulatus*, ♂, Tongatabu, × 1½.
Fig. 2*a*. Same, under side.
Fig. 3. *Phymodius ungulatus*, ♂, Bonin Islands, × 1½
Fig. 3*a*. Same, under side.
Fig. 4. *Phymodius ungulatus*, ♂, Honolulu, × 1½.
Fig. 4*a*. Same, under side.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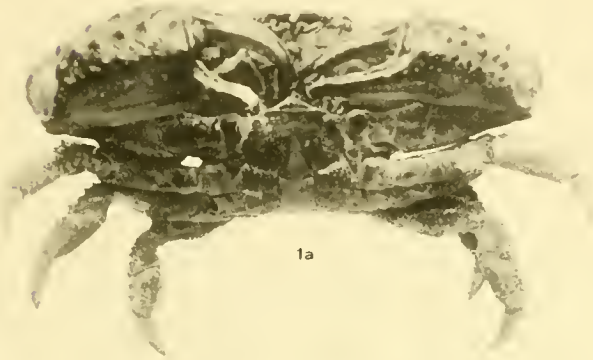
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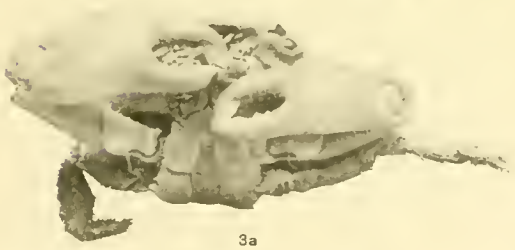
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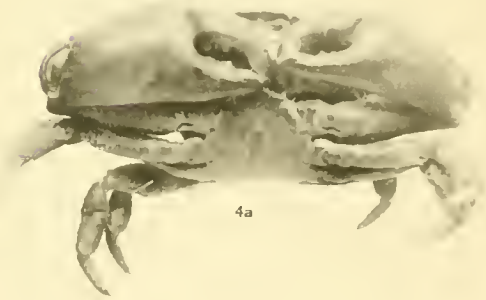
4a

HELIOTYPE CO., BOSTON.

PLATE 4.

Plate 4.

Fig. 1. *Phymodius ungulatus*, ♂, Fakarava, × 1½.
Fig. 1*a*. Same, under side.
Fig. 2. *Phymodius ungulatus*, ♀, Borabora, × 1½.
Fig. 2*a*. Same, under side.
Fig. 3. *Phymodius ungulatus*, ♂, Fakarava, × 1½.
Fig. 3*a*. Same, under side.
Fig. 4. *Phymodius ungulatus*, ♂, Tari-Tari, × 1½.
Fig. 4*a*. Same, under side.

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2a

1a

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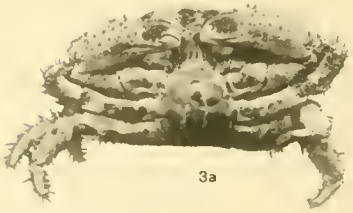
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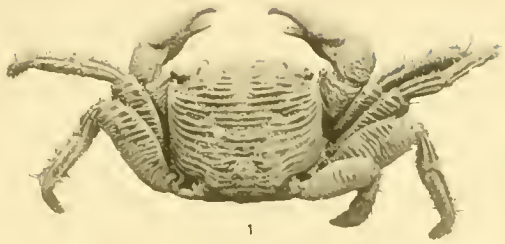
HELIOTYPE CO., BOSTON

PLATE 5.

Plate 5.

Fig. 1. *Pachygrapsus fakaravensis*, ♂, type, nat. size.
Fig. 2. *Sesarma* (*Parasesarma*) *carolinensis*, ♂, type, × 2½.
Fig. 2*a*. Same, under side.
Fig. 3. *Lophomicippa limbata*, ♀, type, × 4. (Some legs broken off.)
Fig. 4. *Nucia gelida*, ♀, type, × 4.
Fig. 5. *Cyclodius ornatus*, ♀, Fakarava, × 4.
Fig. 6. *Parthenope* (*Parthenope*) *melana*, ♀, type, nat. size.
Fig. 7. *Scyramathia vesicularis*, ♂, type, × 1½.
Fig. 8. *Cycloxanthops cavatus*, ♂, type, × 4. (Hind part foreshortened.)
Fig. 9. *Thalamonyx parvidens*, ♂, type, × 1½.



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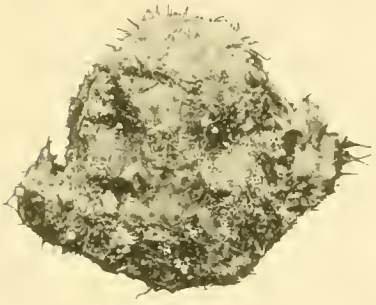

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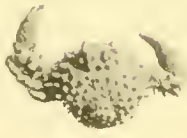

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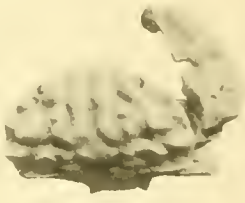

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HELIOTYPE CO., BOSTON.

PLATE 6.

Plate 6.

Fig. 1. *Lophomicippa limbata*, ♀, type, side view, × 4.
Fig. 1*a*. First leg of same, × 8.
Fig. 1*b*. Second leg of same, × 8.
Fig. 1*c*. Third leg of same, × 8.
Fig. 1*d*. Fourth leg of same, × 8.
Fig. 1*e*. Maxilliped of same, × 16.
Fig. 1*f*. Front of same, × 8.
Fig. 1*g*. Cheliped of same, × 12.
Fig. 2. *Parthenope* (*Parthenope*) *melana*, ♀, type, × $1\frac{1}{5}$.
Fig. 3. *Cycloxanthops cavatus*, ♂, type, maxilliped, × 24.
Fig. 3*a*. Same, cheliped, × 8.

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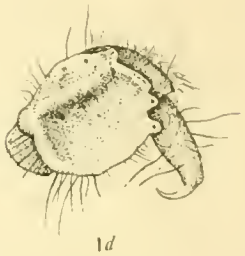
1c



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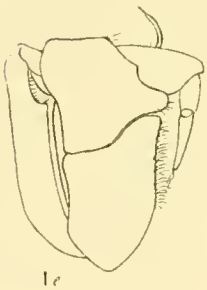

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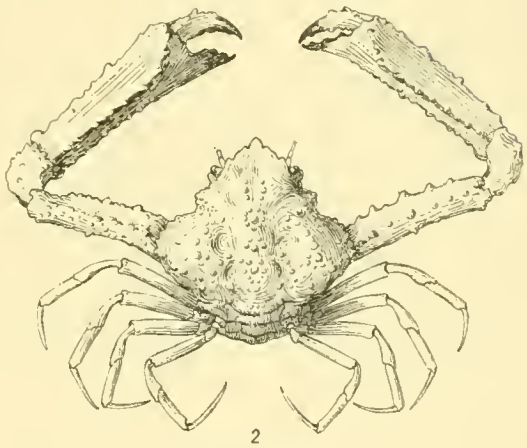

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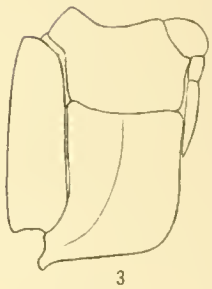

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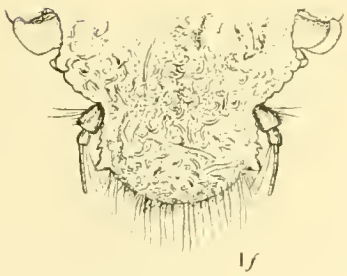

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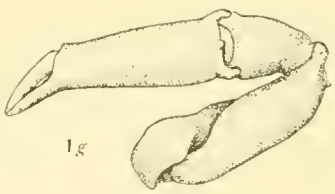


1g

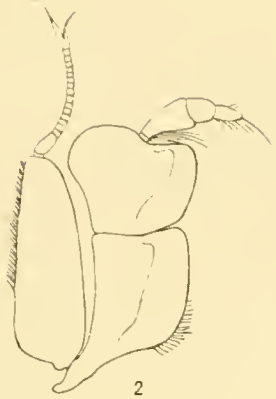
3a

HELIOTYPE CO., BOSTON

PLATE 7.

Plate 7.

Fig. 1. *Actaea remota*, ♂, × 3⅗.
Fig. 2. *Hemigrapsus elongatus*, ♂, Tongatabu, maxilliped, × 11.
Fig. 2*a*. Abdomen of same, × 7.
Fig. 3. *Micropanope taboguillensis*, ♂, type, abdomen, × 8.
Fig. 3*a*. Larger chela of same, × 4.
Fig. 4. *Ptychognathus easterana*, ♂, type, maxilliped, × 8.
Fig. 4*a*. Abdomen of same, × 4⅘.
Fig. 5. *Xanthias ponapensis*, ♂, type, × 3⅕.
Fig. 5*a*. Abdomen of same, × 8.
Fig. 6. *Leptodius efferens*, ♂, type, larger chela, × 7⅕.
Fig. 6*a*. Abdomen of same, × 16.
Fig. 7. *Cyclodius gracilis*, ♀, Funafuti, front, × 4.
Fig. 8. *Cyclodius ornatus*, ♀, Tari-Tari, front, × 7⅕.



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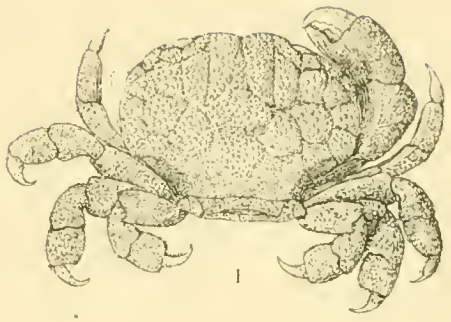

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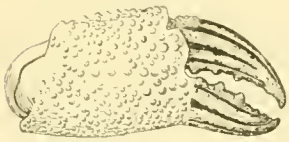

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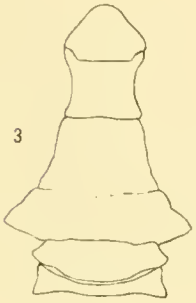

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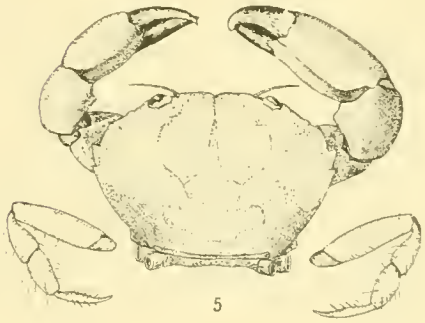

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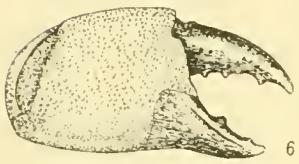

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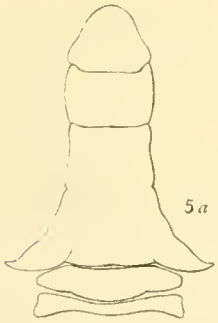

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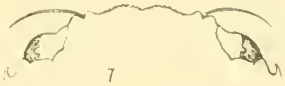

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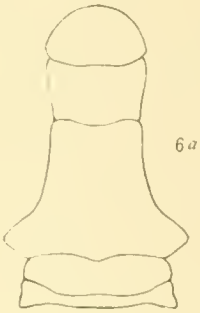


6a

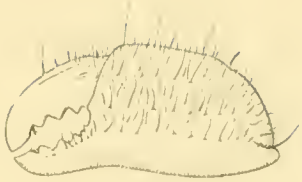
HELIOTYPE CO., BOSTON.

PLATE 8.

Plate 8.

Fig. 1. *Scyramathia vesicularis*, ♂, type, × $2\frac{2}{3}$.
Fig. 1*a*. Ventral view of anterior half of same, × 4.
Fig. 2. *Pilodius paumotensis*, ♂, type, × $3\frac{1}{3}$.
Fig. 2*a*. Chela of same, × $5\frac{1}{3}$.
Fig. 2*b*. Abdomen of same, × 9.
Fig. 3. *Actumnus integerrimus*, ♀, Fakarava, carapace, × 8.
Fig. 3*a*. Cheliped of same, × 8.
Fig. 3*b*. Longest leg of same, × $9\frac{3}{5}$.

3

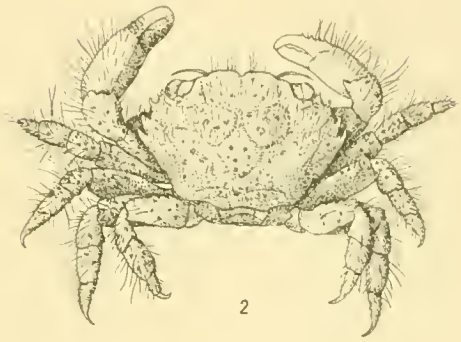


2 *a*

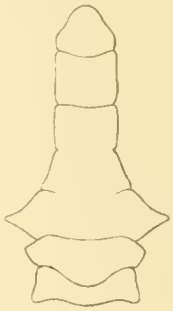
3 *a*

3 *b*

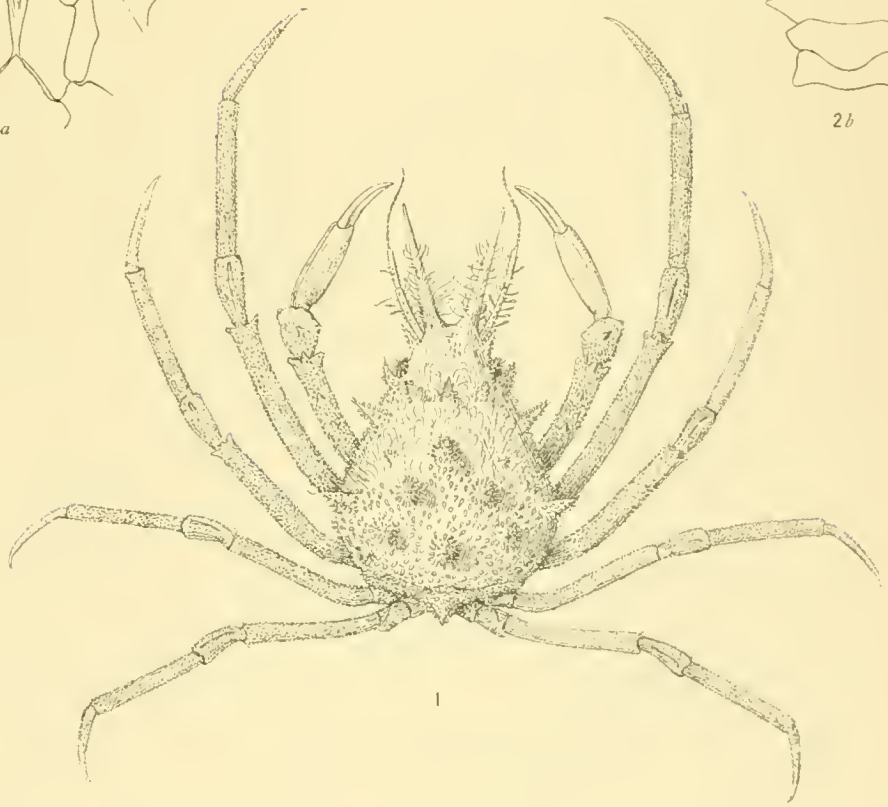
1 *a*



2



2 *b*



1

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PLATE 9.

Plate 9.

Fig. 1. *Sesarma* (*Parasesarma*) *carolinensis*, ♂, type, upper surface of movable finger, × 6⅔.

Fig. 2. *Nucia gelida*, ♀, type, carapace, × 8.

Fig. 2*a*. Second leg of same, × 16⅕.

Fig. 2*b*. Cheliped of same, × 13⅗.

Fig. 2*c*. Front view of same, × 19.

Fig. 3. *Callinectes alexandri*, ♂, Papeete, lateral teeth, × 4⅘.

Fig. 3*a*. Abdomen of same, × 4.

Fig. 3*b*. Front of same, × 4⅘.

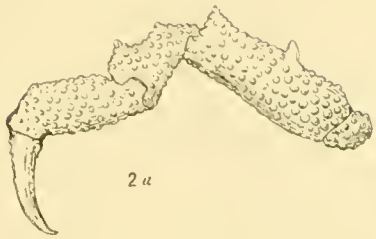
Fig. 4. *Platypodia digitalis*, ♀, type, right chela, × 4.

Fig. 4*a*. Left chela of same, × 4.

Fig. 5. *Chlorodopsis scabricula*, ♀, Papeete, chela, × 6⅔.

Fig. 6. *Pachygrapsus fakaravensis*, ♂, type, chela, × 2⅔.

Fig. 6*a*. Abdomen of same, × 2⅔.



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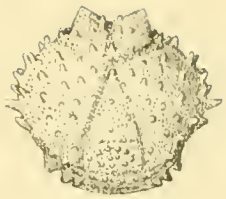

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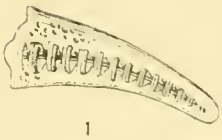
2b

2c



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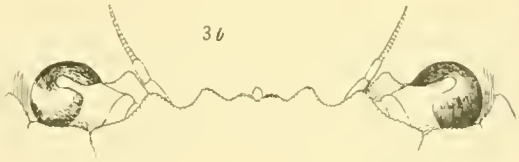
4

3

3a

4a



3b

6a

6

5

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